

9-2013

GEO 101N.02: Introduction to Physical Geology

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Recommended Citation

Staats, Molly F., "GEO 101N.02: Introduction to Physical Geology" (2013). *Syllabi*. 116.
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Introduction to Physical Geology (GEO 101N, Sect. 02, 3 credits) Fall, 2013

Instructor: Molly F. Staats
Email: molly.staats@umontana.edu

Office: CHCB 368

Class Meetings: MWF from 2:10 PM - 3:00 PM, CHCB 131

Office Hours: Monday 12:00 PM-1:00 PM and Wednesday 3:00 PM-4:00 PM. Please do not hesitate to contact me to arrange another meeting time.

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 (3rd Edition) with CONNECT Plus 1-semester Access Card*, Reynolds, Johnson, Morin, and Carter (ISBN: 978-0-07-759857-0). Alternatively, ebook and online access can be purchased online.
- 2) *Iclicker (classroom response system)* (ISBN: 978-0-7167-7939-1)

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/m_staats_sec02_fall_2013. 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. You may purchase your iclicker from the bookstore (must be the iclicker model – other brands will not work) or use your iOS/Android devices with a subscription fee. Course credit for clicker use in class will begin **Wednesday, September 4th**. 6 days' worth of clicker points will be dropped, no questions asked.

Use your iclicker or iOS/Android device once you get into class. Then go to the website (www.iclicker.com for the iclicker or <https://www.iclickergo.com/> for iOS/Android devices) and register it. **Use your 790 number** (the number on your Griz card, NOT your netid - the user name that you use when logging into OneStop/Moodle) when registering your clicker and enter your name **as it appears in the official university directory**.

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

Moodle: We will be using an online course supplement. You can log into Moodle by going to UOnline from the UM homepage. You will see the geology course listed when you enter Moodle. If you have technical problems with Moodle, call the UOnline Techs at 243-4999 (during regular working hours only) or email.

To obtain your NetID, go to <http://www.umt.edu/it/support/accessres/netid.php>

Online Assignments Assigned chapter quizzes can be found on Moodle, while study modules (LearnSmart) can be found on McGraw Hill Connect (follow the link on Moodle or the one provided here: http://connect.mcgraw-hill.com/class/m_staats_sec02_fall_2013). Due dates are listed on the schedule included here. LearnSmart modules are a study tool that need to be completed by the deadline. While the reading quizzes can be taken up to 2 times (up to 20 minutes each attempt) before the deadline– your highest scoring attempt will be recorded for your grade.

Note: When you register for McGraw Hill Connect, enter your name as it appears in the university directory.

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.

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 – A number of options will be offered on the Moodle site throughout the semester. There will be an all-day Optional Saturday Field Trip (participation and short assignment) for 5% on Saturday, October 12th. **Maximum extra credit per student is 5% of the 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 portions, which will include concept sketches. All material covered in lecture, text, and assignments (see schedule below) is fair game. All exams are mandatory (please note that your lowest-scoring midterm of the three will be dropped), unless you can prove in writing that you were ill (written verification from physician) or had a death in your immediate family. In such situations, you must contact me **before** the exam to inform me of your absence. Missing an exam will result in a grade of 0 and no make-up will be given unless you meet the exception criteria above (verified illness or death in the family **AND** advance notification).

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. **It is your responsibility to make sure you get messages sent to your UM email address.** Make sure that all emails contain the Course: GEO 101 and your full name.

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. Part of that time you will be reading the textbook chapters. Some of the time will be spent working on LearnSmart modules and taking quizzes or discussing/studying with other students in the class.

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/

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

Classroom courtesy: 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.

GEO101-02 Fall 2013 Course Schedule

Date	Day	Chapter/Section in <i>Exploring Geology</i>	Online assignments
Aug. 26	M	Ch. 1 The Nature of Geology (omit 1.4, 1.9, 1.10)	
Aug. 28	W	Ch. 2 Investigating Geologic Questions (omit 2.2, 2.10, 2.11)	
Aug. 30	F	Ch. 2 Investigating Geologic Questions (omit 2.2, 2.10, 2.11)	
Sept. 2	M	NO CLASS: Labor Day	LearnSmart Module Chapter 2 & Chapter 1/2 quiz due at midnight
Sept. 4	W	Ch. 3 Plate Tectonics (omit 3.9, add 10.3)	i<clicker starts
Sept. 6	F	Ch. 3 Plate Tectonics (omit 3.9, add 10.3)	
Sept. 9	M	Ch. 3 Plate Tectonics (omit 3.9, add 10.3)	LearnSmart Module Chapter 3 & Chapter 3 quiz due at 5pm
Sept. 11	W	Ch. 3 Plate Tectonics (omit 3.9, add 10.3)	
Sept. 13	F	Ch. 4 Earth Materials (omit 4.7, 4.15)	
Sept. 16	M	Ch. 4 Earth Materials (omit 4.7, 4.15)	LearnSmart Module Chapter 4 & Chapter 4 quiz due at 5pm
Sept. 18	W	EXAM #1 (covers Ch. 1, 2,3,4)	
Sept. 20	F	Ch. 5 Igneous Environments (omit 5.5, 5.8, 5.13-5.15)	
Sept. 23	M	Ch. 5 Igneous Environments (omit 5.5, 5.8, 5.13-5.15)	
Sept. 25	W	Ch. 6 Volcanoes and Volcanic Hazards (omit 6.5, 6.9, 6.15)	
Sept. 27	F	Ch. 6 Volcanoes and Volcanic Hazards (omit 6.5, 6.9, 6.15)	
Sept. 30	M	Ch. 7 Sedimentary Environments and Rocks (omit 7.8-7.12, 7.15)	LearnSmart Module Chapter 5 and 6 & Chapter 5/6 quiz due at 5pm
Oct. 2	W	Ch. 7 Sedimentary Environments and Rocks (omit 7.8-7.12, 7.15)	
Oct. 4	F	Ch. 8 Deformation and Metamorphism (omit 8.10, 8.11, 8.13-8.15)	
Oct. 7	M	Ch. 8 Deformation and Metamorphism (omit 8.10, 8.11, 8.13-8.15)	LearnSmart Module Chapter 7 and 8 & Chapter 7/8 quiz due at 5pm
Oct. 9	W	Ch. 8 Deformation and Metamorphism (omit 8.10, 8.11, 8.13-8.15)	
Oct. 11	F	Ch. 11 Mountains, Basins, and Continents (omit 11.3, 11.5, 11.9, 11.11)	
Oct. 14	M	Ch. 11 Mountains, Basins, and Continents (omit 11.3, 11.5, 11.9, 11.11)	LearnSmart Module Chapter 11 & Chapter 11 quiz due at 5pm
Oct. 16	W	EXAM #2 (covers Ch. 5, 6, 7, 8, 11)	
Oct. 18	F	Ch. 12 Earthquakes and Earth's Interior (omit 2.11, 12.13, 12.14, 12.17)	
Oct. 21	M	Ch. 12 Earthquakes and Earth's Interior (omit 2.11, 12.13, 12.14, 12.17)	
Oct. 23	W	Ch. 12 Earthquakes and Earth's Interior (omit 2.11, 12.13, 12.14, 12.17)	
Oct. 25	F	Ch. 12 Earthquakes and Earth's Interior (omit 2.11, 12.13, 12.14, 12.17)	

Oct. 28	M	Ch. 9 Geologic Time (omit 9.7, 9.10-9.12)	LearnSmart Module Chapter 12 & Chapter 12 quiz due at 5pm
Oct. 30	W	Ch. 9 Geologic Time (omit 9.7, 9.10-9.12)	
Nov. 1	F	Ch. 9 Geologic Time (omit 9.7, 9.10-9.12)	
Nov. 4	M	Ch. 18 Energy and Mineral Resources (omit 18.6-18.8, 18.14)	LearnSmart Module Chapter 9 & Chapter 9 quiz due at 5pm
Nov. 6	W	Ch. 18 Energy and Mineral Resources (omit 18.6-18.8, 18.14)	
Nov. 8	F	Ch. 18 Energy and Mineral Resources (omit 18.6-18.8, 18.14)	
Nov. 11	M	NO CLASS: Veterans Day	LearnSmart Module Chapter 18 & Chapter 18 quiz due at Midnight
Nov. 13	W	EXAM #3 (covers Ch. 12, 9, 18)	
Nov. 15	F	Ch. 16 Streams and Flooding (omit 16.4, 16.10, 16.11, 16.15, 16.16)	
Nov. 18	M	Ch. 16 Streams and Flooding (omit 16.4, 16.10, 16.11, 16.15, 16.16)	LearnSmart Module Chapter 16 & Chapter 16 quiz due at 5pm
Nov. 20	W	Ch. 17 Water Resources (omit 17.6, 17.7)	
Nov. 22	F	Ch. 17 Water Resources (omit 17.6, 17.7)	
Nov. 25	M	Ch. 17 Water Resources (omit 17.6, 17.7)	LearnSmart Module Chapter 17 & Chapter 17 quiz due at 5pm
Nov. 27-29	W/F	NO CLASS: Thanksgiving Break	
Dec. 2	M	Ch. 13 Climate (only 13.10, 13.11) and Ch. 14 Glaciers and Changing Sea levels (omit 14.9-14.16, 14.18, 14.19)	
Dec. 4	W	Ch. 13 Climate (only 13.10, 13.11) and Ch. 14 Glaciers and Changing Sea levels (omit 14.9-14.16, 14.18, 14.19)	
Dec. 6	F	Ch. 13 Climate (only 13.10, 13.11) and Ch. 14 Glaciers and Changing Sea levels (omit 14.9-14.16, 14.18, 14.19) REVIEW	LearnSmart Module Chapter 13 and 14 & Chapter 13/14 quiz due Monday, December 9th at midnight
DEC	T	EXAM #4 (FINAL)- Ch. 16, 17, 13.10-13.11, 14, and Cumulative: Tuesday, Dec 10th 1:10PM-3:10PM	

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.