

Introduction to Physical Geology (GEO 101N-01, 3 credits) Fall, 2016

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Class Meetings: MWF from 11:00 AM - 11:50 PM, CHCB 131

Office Hours: Monday and Wednesday 9-10 AM or by appointment. Please do not hesitate to contact me to arrange to meet at another time.

Course Description: This course is an introduction to geosciences; the study of how Earth works. Humans around the world are impacted every day by interaction with our planet, including geologic hazards and access to natural resources. This course will help you to develop your understanding of both the physical processes that have gone into making the Earth what it is today, and an awareness of how Montana fits into the global picture.

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

- describe, analyze, and assess the geologic features, events, and processes that impact your 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) Geologic processes have impacted the development of human civilization and the actions of humans can significantly impact the Earth

Required materials:

- 1) **Essentials of Geology (5th Edition), Steven Marshak (ISBN: 978-0393601107) including online access to Norton Smartwork website**
- 2) **Iclicker remote (classroom response system), simple version OK (ISBN: 0716779390) or REEF app**

Textbook: Both the textbook and access to the Norton Smartwork website are essential for this course. There is an ebook option (purchase through Norton Smartwork link on Moodle). Access to the Norton Smartwork website access is included with a new text. For registration info, see [Online Assignments](#) below. New textbooks at the bookstore have a Geotours workbook packaged with them for no additional cost (the paper Geotours workbook is optional, as you can access the info online).

One copy of *Essentials of Geology* is on reserve at the Mansfield Library circulation desk. It is most effective for your learning to read chapters of the text prior to the class in which they will be discussed.

Moodle: You can use Moodle to see your grades, access course documents, access and register for Smartwork and register an iclicker remote. Access the Moodle course supplement by going to UOnline from the UM homepage. Log on with your NetID. GEO101 will be listed when you enter Moodle. For Tech Support, call the UOnline Techs at 406.243.4999 or 866.225.1641 (toll-free) or email them at umonline-help@umontana.edu. They are available from 8 AM to 5 PM, Monday through Friday.

Online Assignments (Smartwork and Geotours): Access Norton Smartwork on the course moodle page, then follow the directions to enter an access code or choose other options. You will have three attempts at each question with no time limit for the Smartwork assignments.

If you do not have a paper Geotour workbook, you will find the instructions and text of Geotour questions within the assignment on Smartwork. Your grades will be visible immediately in the Smartwork gradebook. Your total score for Smartworks and Geotours will appear in the Moodle gradebook.

Please note that the Norton website has its own technical support staff. Please do not email me for technical support or help with your Smartwork account access. Norton tech support has extended hours including evenings and weekends. The online chat option is the best way to get your question answered quickly. The (green) chat box will appear **after you have submitted the online help request ticket**. Please do let me know if you think your responses have been scored incorrectly or have a question about the accuracy of an exercise.

iclicker: The purpose of the iclicker is to give the instructor feedback on student understanding as well as to monitor participation. The browser/app version, REEF polling, is an option. Info at www.iclicker.com Course credit for clicker use in class will begin **Wednesday, September 7th**. Register your iclicker remote on the course Moodle site. Look for the iclicker registration tool on the left side of the screen.

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.

Assessment: Exams 1, 2, and 3 – 40% total, lowest of the three dropped
Final Exam (required) – 20%
Smartwork and Geotour assignments – 20%
In-class assignments* – 10%
iclicker response – 10%
* one in-class assignment will be dropped
* three iclicker days will be dropped

Final grade: This course must be taken for a traditional letter grade to meet the Natural Sciences General Education requirement. A minimum final grade of C- is required to meet a Gen Ed requirement.

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- 0-62%	F 59 or below			

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, which may include drawing and labelling diagrams. All material covered during class meetings, in the text, and in other required assignments may appear on exams. Makeup exams will be allowed only for university-excused events and for extraordinary circumstances. If you need to request/discuss a makeup exam, it is required that you contact me in advance of the exam date and as early as possible. The lowest of your three midterm grades will be dropped (including a score of zero for a non-excused missed exam). **All students are required to take the final exam.**

Extra Credit: Maximum extra credit that can be earned is 5% of course grade.

One option for extra credit will be a full-day Field Trip (participation and short assignment) – Saturday in October, Date TBA. Online extra credit options will also be offered.

Communication: Please note that I will only use your official UM email. This is required by UM to comply with FERPA (the Federal Educational Rights and Privacy Act). **It is your responsibility to make sure you read messages sent to your UM email address in a timely manner.**

Studying & Time Expectations: A standard benchmark for a college course 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 assignments and other forms of study.

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 set up a time to meet 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://www.umt.edu/vpsa/policies/student_conduct.php

Classroom courtesy: 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, 2016 Course Schedule

Date	Day	Chapter in <u>Essentials of Geology 5e</u>	Assignments in addition to textbook reading...
Aug. 29	M	Intro to Course. Prelude – And Just What is Geology?	
Aug. 31	W	Ch. 1 The Earth in Context	
Sept. 2	F	Ch. 1 The Earth in Context	
Sept. 5	M	Labor Day Holiday	Syllabus Quiz and Ch. 1 Smartwork, due midnight Mon 9/5
Sept. 7	W	Ch. 1 The Earth in Context	
Sept. 9	F	Ch. 2 The Way the Earth Works: Plate Tectonics	
Sept. 12	M	Ch. 2 The Way the Earth Works: Plate Tectonics	Ch. 2 Smartwork, due midnight Sun 9/11
Sept. 14	W	Ch. 2 The Way the Earth Works: Plate Tectonics	
Sept. 16	F	Ch. 3 Patterns in Nature: Minerals	
Sept. 19	M	Ch. 3 Patterns in Nature: Minerals	Ch. 3 Smartwork, also Geotour B (Tectonics), due midnight Sun 9/18
Sept. 21	W	EXAM #1 (covers Ch. 1, 2, 3)	
Sept. 23	F	Interlude A and Ch. 4 Up from the Inferno: Magma and Igneous Rocks	
Sept. 26	M	Ch. 4. Up from the Inferno: Magma and Igneous Rocks	Ch. 4 Smartwork due midnight Sun 9/22
Sept. 28	W	Ch. 5 The Wrath of Vulcan: Volcanic Eruptions	
Sept. 30	F	Ch. 5 The Wrath of Vulcan: Volcanic Eruptions	
Oct. 3	M	Ch. 5 The Wrath of Vulcan: Volcanic Eruptions and Interlude B (omit B3)	Ch. 5 Smartwork, also Geotour E (Volcanoes), due midnight Sun 10/2
Oct. 5	W	Ch. 6. Pages of Earth's Past: Sedimentary Rocks	
Oct. 7	F	Ch. 6. Pages of Earth's Past: Sedimentary Rocks	
Oct. 10	M	Ch. 7. Metamorphism: A Process of Change	Ch. 6-7 Smartwork due midnight Tues 10/11
Oct. 12	W	Ch. 10. Deep Time: How Old is Old?	
Oct. 14	F	Ch. 10. Deep Time: How Old is Old?	
Oct. 17	M	Ch. 10. Deep Time: How Old is Old?	Ch. 10 Smartwork due midnight Sun 10/16
Oct. 19	W	EXAM #2 (covers Ch. 4, 5, 6, 7, 10)	
Oct. 21	F	Ch. 9. Craggs, Cracks and Crumples: Crustal Deform. and Mtn. Building	
Oct. 24	M	Ch. 9. Craggs, Cracks and Crumples: Crustal Deform. and Mtn. Building	
Oct. 26	W	Ch. 9. Craggs, Cracks and Crumples: Crustal Deform. and Mtn. Building	

Date	Day	Chapter in <u>Essentials of Geology 5e</u>	Assignments in addition to textbook reading...
Oct. 28	F	Ch. 8. A Violent Pulse: Earthquakes	
Oct. 31	M	Ch. 8. A Violent Pulse: Earthquakes	Ch. 9 Smartwork due midnight Sun 10/30
Nov. 2	W	Ch. 8. Earthquakes and Interlude D. Seeing Inside the Earth	
Nov. 4	F	Ch. 12 Riches in Rock: Energy and Mineral Resources	
Nov. 7	M	Ch. 12 Riches in Rock: Energy and Mineral Resources	Ch. 8 Smartwork and Geotour H (EQ), due midnight Sun 11/6
Nov. 9	W	Ch. 12 Riches in Rock: Energy and Mineral Resources	
Nov. 11	F	Veteran's Day Holiday	
Nov. 14	M	Ch. 14. Running Water: The Geology of Streams and Floods	Ch. 12 Smartwork due midnight Sun 11/13
Nov. 16	W	EXAM #3 (covers Ch. 9, 8, 12)	
Nov. 18	F	Ch. 14. Running Water: The Geology of Streams and Floods	
Nov. 21	M	Ch. 16. A Hidden Reserve: Groundwater	Ch. 14 Smartwk. and Geotour N (Streams), due midnight Sun 11/20
Nov. 23-25	W-F	Thanksgiving Break	
Nov. 28	M	Ch. 16. A Hidden Reserve: Groundwater	Ch. 16 Smartwork due midnight Mon 11/28
Nov. 30	W	Ch. 18. Amazing Ice: Glaciers and Ice Ages	
Dec. 2	F	Ch. 18. Amazing Ice: Glaciers and Ice Ages	
Dec. 5	M	Ch. 18. Amazing Ice: Glaciers and Ice Ages	Ch. 18 Smartwork and Geotour R (Glaciers) due midnight Sun 12/4
Dec. 7	W	Ch. 19. Global Change in the Earth System	
Dec. 9	F	Ch. 19. Global Change in the Earth System	
Dec. 12	M	Review	Ch. 19 Smartwork due midnight Sun 12/11
		Final Exam – Part I: Ch. 14, 16, 18, 19; Part 2: cumulative multiple choice. Wednesday, Dec. 14 8-10 AM	

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.