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GEO 101N.01: Introduction to Physical Geology

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Introduction to Physical Geology (GEO 101N, Sect. 01, 3 credits) Fall, 2014

Instructor: Dr. Kathleen Harper
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Office: CHCB 371
Phone: 243-4720

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

Office Hours: Monday and Wednesday; 9-10 PM or by appointment. It is impossible to schedule office hours that are convenient for every student! 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 everyday 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. 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) 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 (4th Edition)**, Steven Marshak (ISBN: 978-0-393-91939-4). Please note that the paper workbook packages with textbooks at the bookstore is a free addition from the publisher. We will use this material, however it is also available online if you are purchasing a new or used copy of the text from another source. Access to the Norton Smartwork website access is required. It is included with a new text or with used text with unused card at the front, or can be purchased separately online at www.norton.com
- 2) **Iclicker remote (classroom response system)**, simple version OK (ISBN: 0716779390).

Textbook: Access to the textbook and the Norton Smartwork website is essential for this course. New textbooks at the bookstore have a free workbook packaged with them. The workbook is optional – duplicate information is available online. 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.

Moodle: Access the Moodle course supplement by going to UOnline from the UM homepage. Logon with your netID. If you are enrolled in the course, you will see GEO101 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 during the regular work day, Monday through Friday.

Online Assignments: Online Assignments need to be completed are on Smartwork (follow link on Moodle). Access to Smartwork is included with new copies of the textbook. If you purchase a used copy of the text that does not have an unused Smartwork access card at the front, you will need to purchase access to the Smartwork website. A two-week free trial is available, so if you need more time to purchase your book/access or if you are not sure you will stay in the course, you should sign up using the free trial.

To access the online assignments, create a SmartWork account and self-enroll into our class following the "First Time User" instructions at <http://smartwork.wwnorton.com>. Please enter your name as it appears in the university directory (no nicknames, please!), your correct 790 number, your UM email address. **The enrollment key for our course is ESSGEO4E6288.** Smartwork assignments are a study tool - these assignments are required and are part of your grade, but are scored on completion only. Your grade will be visible immediately in the Smartwork gradebook. I will transfer these periodically to the Moodle gradebook.

Due dates for online assignments are listed on the schedule included on a the attached schedule.

Please note that the Norton website has its own technical support staff. They are available for extended hours including evening and weekend hours, by phone or email. Please do not email me for technical support or help with your Smartwork account access. 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 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 brand to work with my software. We cannot use the iclickergo (web version) for this course because the wireless support is not sufficient in our classroom. Course credit for clicker use in class will begin **Wednesday, September 3rd**. Note that final calculation of your iclicker total at the end of the term will drop your six lowest-scoring days.

Use your iclicker once in class. Then go to the website (www.iclicker.com) and register it (open the MENU and click REGISTER YOUR REMOTE). **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.

Assessment: **Exams 1, 2, and 3 – 35% total, lowest of the three dropped**
 Final Exam (required) – 20%
 Smartwork assignments – 15%
 In-class assignments – 10%
 iclicker response – 10%
 Geotours – 10%

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- 60-62%	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, including concept sketches. All material covered in lecture, text, and assignments (see schedule below) may appear on exams. Makeup exams will be allowed only for university-sponsored 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 or as soon as possible. The lowest of your three midterm grades will be dropped (this would include a score of zero given for a non-excused missed exam). **All students are required to take the final exam.**

Extra Credit: **Maximum extra credit will be 5% of course grade.**

One option for extra credit will be a Saturday Field Trip (participation and short assignment) – Date TBA. Additional extra credit assignments will be offered via the Moodle site.

Communication: Please note that I will only use your official UM email. 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 read messages sent to your UM email address in a timely manner.**

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 Smartwork and Geotour assignments and other forms of 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 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://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. 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, 2014 Course Schedule

<i>Date</i>	<i>Day</i>	<i>Chapter in Essentials of Geology 4e</i>	<i>Assignments</i>
Aug. 25	M	Intro to Course. Prelude – And Just What is Geology?	
Aug. 27	W	Ch. 1- The Earth in Context	
Aug. 29	F	Ch. 1- The Earth in Context	
Sept. 1	M	Labor Day Holiday	Ch. 1 Smartwork; also quiz on syllabus due Monday 9/1, midnight
Sept. 3	W	Ch. 2 The Way the Earth Works: Plate Tectonics	
Sept. 5	F	Ch. 2 The Way the Earth Works: Plate Tectonics	
Sept. 8	M	Ch. 2 The Way the Earth Works: Plate Tectonics	Ch. 2 Smartwork due 11AM, Mon 9/8
Sept. 10	W	Ch. 2 The Way the Earth Works: Plate Tectonics	
Sept. 12	F	Ch. 3. Patterns in Nature: Minerals	
Sept. 15	M	Ch. 3. Patterns in Nature: Minerals	Ch. 3 Smartwork due; also Geotour B, due 11AM Mon 9/15
Sept. 17	W	EXAM #1 (covers Ch. 1, 2, and 3)	
Sept. 19	F	Interlude A and Ch. 4. Up from the Inferno: Magma and Igneous Rocks	
Sept. 22	M	Ch. 4. Up from the Inferno: Magma and Igneous Rocks	Ch. 4 Smartwork due 11AM Mon 9/22
Sept. 24	W	Ch. 5. The Wrath of Vulcan: Volcanic Eruptions	
Sept. 26	F	Ch. 5. The Wrath of Vulcan: Volcanic Eruptions	
Sept. 29	M	Ch. 5. The Wrath of Vulcan: Volcanic Eruptions	Ch. 5 Smartwork due; also Geotour E, due 11AM Mon 9/29
Oct. 1	W	Interlude B (omit B3) and Ch. 6. Pages of Earth's Past: Sedimentary Rocks	
Oct. 3	F	Ch. 6. Pages of Earth's Past: Sedimentary Rocks	
Oct. 6	M	Ch. 7. Metamorphism: A Process of Change	Ch. 6-7 Smartwork due 11AM Mon 11/6
Oct. 8	W	EXAM #2 (covers Ch. 4, 5, 6, 7)	
Oct. 10	F	Ch. 10. Deep Time: How Old is Old?	
Oct. 13	M	Ch. 10. Deep Time: How Old is Old?	Ch. 10 Smartwork due 11AM Mon 11/13
Oct. 15	W	Ch. 10. Deep Time: How Old is Old?	

<i>Date</i>	<i>Day</i>	<i>Chapter in Essentials of Geology 4e</i>	<i>Assignments</i>
Oct. 17	F	Ch. 8. A Violent Pulse: Earthquakes	
Oct. 20	M	Ch. 8. A Violent Pulse: Earthquakes	Ch. 8 Smartwork also Geotour H, due 11AM Mon, 10/20
Oct. 22	W	Ch. 8. A Violent Pulse: Earthquakes and Interlude D. Seeing Inside the Earth	
Oct. 24	F	Ch. 9. Craggs, Cracks and Crumples: Crustal Deformation and Mountain Building	
Oct. 27	M	Ch. 9. Craggs, Cracks and Crumples: Crustal Deformation and Mountain Building	Ch 9 Smartwork due 11AM Mon, 10/27
Oct. 29	W	Ch. 12 Riches in Rock: Energy and Mineral Resources	
Oct. 31	F	Ch. 12 Riches in Rock: Energy and Mineral Resources	
Nov. 3	M	Ch. 12 Riches in Rock: Energy and Mineral Resources	Ch. 12 Smartwork also Geotour L, due 11AM Mon, 11/3
Nov. 5	W	EXAM #3 (covers Ch. 10, 8, 9, 12)	
Nov. 7	F	Ch. 14. Running Water: The Geology of Streams and Floods	
Nov. 10	M	Ch. 14. Running Water: The Geology of Streams and Floods	Ch. 14 Smartwork due 11AM Mon, 11/10
Nov. 12	W	Ch. 16. A Hidden Reserve: Groundwater	
Nov. 14	F	Ch. 16. A Hidden Reserve: Groundwater	
Nov. 17	M	Ch. 16. A Hidden Reserve: Groundwater	Ch. 16 Smartwork also Geotour N, due 11AM Mon, 11/17
Nov. 19	W	Ch. 18. Amazing Ice: Glaciers and Ice Ages	
Nov. 21	F	Ch. 18. Amazing Ice: Glaciers and Ice Ages	
Nov. 24	M	Ch. 18. Amazing Ice: Glaciers and Ice Ages	Ch. 18 Smartwork due 11AM Mon, 11/24
Nov. 26	W	Thanksgiving Holiday- no class	
Nov. 28	F	Thanksgiving Holiday- no class	
Dec. 1	M	Ch. 19. Global Change in the Earth System	Geotour R due 11AM Mon, 12/1
Dec. 3	W	Ch. 19. Global Change in the Earth System	
Dec. 5	F	Review	Ch. 19 Smartwork due
		EXAM #4 (FINAL) - Ch. 14, 16, 18, 19 and cumulative portion; Friday, Dec. 12th, 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.