

PHYSICAL GEOLOGY

Lecture MWF 10:00- 10:50

Room: Bracy 04

Instructor: Mark McNaught

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OBJECTIVES:

Geology is the scientific study of the earth. It includes studying processes acting on the earth today, and studying the history of the planet to understand what processes acted in the past. The major objectives of this course are to (1) help you to acquire a basic understanding of the processes that shape the earth and its inhabitants and (2) introduce you to the techniques of deciphering the rock record, that is, to teach you to read rocks.

Additional objectives of this course are to:

- 1) Build an awareness of the nature of science.
- 2) Gain an appreciation for, and an understanding of, the geologic features you will see in your travels.
- 3) Develop a sense of our dependence on the earth's finite resources.
- 4) Gain an appreciation of the relationship between geologic processes and wise human habitation of the planet.

GY 110 vs. GY 112

Lecture sections for GY 110 (Physical Geology) and GY 112 (Physical Geology with Lab) both meet at the same time. GY 110 is a three semester hour course without lab, while GY 112 is a four semester hour course with lab. All material related to lecture is the same for both courses. GY 112 students must also be registered for a lab section. Arbitrary switching of lab sessions is not allowed. Lab will meet in room 105 Bracy Hall, BEGINNING THIS WEEK. A tentative schedule for lab is included. Students registered for the lab are expected to attend all laboratory sessions. Additional information will be provided in lab.

GENERAL EDUCATION:

This class can be used to partially satisfy the natural sciences general education requirement (IIB2). Only GY 112 will count as a natural science course with lab. See the Mount Union Catalogue for details.

TEXTBOOK

The textbook for the course is Reynolds et al, *Exploring Geology 2nd edition*.. Reading assignments are listed on the schedule. Assignments are listed by chapter and topic number (number that is in the blue box on each page). Reading should be done before class.

COMPUTER NETWORK

A web site for this course can be found on my home page (<http://www.muc.edu/~mcnaugma/>). Instructions for finding Power points that will be used in class can be found on this site.

CLASS SCHEDULE

A tentative schedule of lecture topics is attached. While individual lecture topics are subject to change, the dates of exams are fixed.

GRADING

Your grade for the lecture portion of this course will be calculated as follows:

Hour Exams: There will be three hour-exams given in class on days noted on the schedule. Exams will focus on material covered after the last exam, but because material discussed later in the course is based on earlier material you can't ignore old material. Topics covered on each exam will be announced in class.

Missed tests must be made up as soon as possible. A makeup exam will only be given with an official written excuse from the Deans office. Arrangements for makeup exams should be made before the test, or within 48 hours after the test except in extremely unusual circumstances.

Final Exam: A CUMULATIVE FINAL EXAM will be given on the day and at the time scheduled by the registrar.

Your grade will be calculated as follows:

	<u>GY 110</u>	<u>GY 112</u>
Hour Exams (3)	70%	53%
(Exams 1,2,3)	(20, 25, 25%)	(15, 19, 19%)
Final Exam	30 %	23%
LAB	_____	<u>24%</u>
	100%	100%

My grade scale is roughly as follows: 90's = A's (A- or A); 80's = B's (B-, B, B+); 70's = C's (C-, C, C+) etc. The precise limits for these grades may fluctuate.

ADDITIONAL NOTES

Academic Honesty and Integrity: Students are expected to obey the conduct guidelines and rules of the University of Mount Union (see your student handbook) with respect to academic honesty and preparation of work for this class. Appropriate classroom behavior is required from all. Please be respectful of the rights of your classmates to learn. Disruptions will not be tolerated and may result in sanctions solely at the discretion of the instructor.

Attendance: Students are expected to attend all classes. Students who miss more than three lectures may be penalized. Make up exams will only be given for officially excused absences.

Any student with a documented disability needing academic accommodations is requested to speak with Disability Support Services (Room 113 Hoover-Price Campus Center) and the instructor, as early in the semester as possible. All discussions will remain

DATE	LECTURE TOPIC (Tentative)	READINGS (By topic number)	LAB (Tentative)*
Aug . 30	Course Introduction,	1-1.2	Mineral Identification
Sept. 1	Minerals: Building Blocks of Rocks	4.4.1, 4.3-4.5, 4.10-4.12	
3	Minerals	4.6-4.9, 4.14	
6	Rocks and the Rock Cycle	1.5, 1.6 ,4.2	Mineral Identification, Min. ID Quiz , Rock ID
8	Rock Classification	5.2,7.5, 8.7	
10	The Big Picture, Into to Plate Tectonics	1.3, 1.4, 3.3, 3.7	
13	Igneous Rocks: Origin of Magma	5.0-5.8	Rock Identification
15	Igneous Rocks	5.9-5.12, 6.0-6.4, 6.6	
17	Volcanoes and Volcanic Processes	6.7, 6.8, 6.10-6.12	
20	Weathering	15.1-15.4	Rock Quiz , Intro to Topographic Maps
22	Mass Wasting	15.7-15.11	
24	EXAM 1		
27	Streams: Surface Water Flow	17.0-17.1, 16.0-16.5	LAB TEST I , Top Maps II
29	Streams	16.6-16.8	
Oct. 1	Streams: Drainage Systems and Floods	16.9-16.13	
4	Glaciers: The World of Ice	14.10-14.11	Map Quiz , Landscape Development: Streams
6	Glacial Landforms and Climate	14.12-14.17, 13.10, 13.11	
8	Sedimentation and Lithification	7.0, 7.3-7.8	
11	Interpreting Sedimentary Rocks	7.9 – 7.13, 9.5-9.6	Landscape Development: Glaciers
13	Geologic Time - Dating	9.0-9.2	
20	Geologic Time	9.7-9.12, 9.3, 9.14	
22	Stratigraphy - Reading the Rock Record	7.12	Lab Test II , Basin Analysis
25	Geologic History		Introduction to Geologic Maps
27	Deformation and Structures	8-8.2	
29	EXAM 2		
Nov. 1	Geologic Structures	8.4-8.5	Geologic Maps
3	Earthquakes	12-12.5, 12.11, 12.12	
5	Earthquakes	12.6-12.10, 12.16	
8	Metamorphism	8.7-8.9	Geologic Maps
10	Metamorphic Rocks and Tectonics	8.11-8.14	
12	Plate Tectonics	3.1-3.3, 3.8, 10.1-10.5	
15	Plate Tectonics	3.4-3.6, 10.6, 11.2,	Lab Test III , Project
17	Plate Tectonics	10.12, 11.5, 11.6, 11.11, 11.13	
19	Coastal Dynamics	14.1-14.5	
22	Coastal Follies	14.6 – 14.7	Project
29	Groundwater: Threatened Resource	17.0-17.4	
Dec. 1	Groundwater: Underground Flow	17.5, 17.6, 17.8-17.11	
3	EXAM 3		Project
6	Energy Resources	18.0-18.4	
8	Mineral Resources	18.9-18.13	
10	TBA		
17 (Friday)	FINAL EXAM (1:00 PM)		

How to Do Well in Geology 110/112

1. Attend Class

Should be obvious but every year someone thinks the extra hour of sleep will do more good than coming to class. WRONG. Emphasis will be placed on material covered in class so to do well you need to be there.

2. Read Early

It is important to keep up with reading assignments. Reading should be done before material is covered in class. You will get more out of this course if you are not seeing material for the first time in class. Lectures will serve to reinforce important points.

3. Read Critically

It is not enough to just read, you must understand what you are reading. In addition it will be necessary to decide what is important when you reading so you do not get bogged down in detail. Critical reading is a skill that is essential to do well in college and will only come with practice.

4. Take (Good) Notes

You are responsible for all material covered in lecture unless you are told explicitly not to worry about something. It is important to extract important points from lecture and record them in your notes. Don't assume if things are not written on the board they are not important.

5. Understand, Don't Just Memorize.

Unfortunately, geology has a large vocabulary and you will need to do some memorization. But it is more important to understand why and how things happen than memorizing terms.

6. Ask Questions

If you don't understand material in class, stop me and ask questions! If there is material in the textbook that is confusing ask questions. The only bad question is the one that is not asked.

7. Don't Cram

There is too much material in this class to sit down the night before an exam and learn it all. Study early and study often. If you learn material as we go along it will make studying for exams easier (and you will do better on quizzes).

8. Get Help

I am here to help you. If you are having major difficulties, or just a minor question, please come by and see me. It doesn't have to be during office hours. If I am not busy I will help you right away or we can set up another time to meet. Or you can call or email with questions or to set up an appointment.