

INTRODUCTION TO PHYSICAL GEOLOGY

GEOL100 -- Section: 0102 -- Fall 2004

Professor: Bill McDonough

Office Hours: Wednesday, 9-10 AM

Office: Chemistry Bldg (091), room 0229

Phone: 301-405-5561

Email: mcdonough@geol.umd.edu (preferred communication medium)

Lectures: EGR 1202 Tues and Thurs, 3:30 - 4:45 PM

Text: *Essentials of Geology* by Stephen Marshak, W. W. Norton & Co., New York, 2004

Class web site: log into <https://umd.blackboard.com/>
and click on [GEOL100: Physical Geology](#)

Course content and attendance policy: I will follow, for the most part, the content of the textbook, although I will provide some supplemental materials and additional perspectives. Exams will be based on lecture material and reading assignments. If you miss a lecture you are encouraged to get notes from a classmate. Reading the assigned text prior to class and attendance at lectures is fundamental to getting a good grade.

Class grading: Your final letter grade will be based on the highest two out of three mid term exam grades (i.e., the lowest mid term grade is dropped) and the final exam. Each exam makes up 33% of your overall final grade. On each exam you will sign your name to your exams and this will indicate that you have accepted the university's pledge of the honor code: *I pledge on my honor that I have not given or received any unauthorized assistance on this examination*

Exams: Exams are given once. There are no specially scheduled or make-up exams. Exceptions will be made for students with disabilities that are officially recognized by the university, or students with serious documented extenuating circumstances; however, these MUST be arranged prior to the scheduled exam date. Exams II and III, and the final will primarily cover material presented since the last exam. Nevertheless, since most course material builds on previous material, all exams have a cumulative character. Exams will consist of multiple-choice and calculations.

Statute of limitations: You may appeal your grade on any exam; however, the appeal must be made within seven days of the time it is handed back in lecture. None will be considered after this deadline. Note - this means that if you are not present to receive your scored exam, you may forfeit the opportunity to appeal.

Field Trip: There will be an optional field trip to Great Falls, VA on **24 Oct (Sunday)**. Participants may drive themselves or may reserve a place on a bus and pay a small fee (probably around \$10.00). Additional details will be provided. *It is possible to earn extra credit, up to 15% of an exam score, by participating in this field trip.*

Honesty: Work submitted under your name must be exclusively your own. Evidence of dishonesty on any exam or assignment will result in the student being given a disciplinary "XF" **for the course**, and reported to the dean of students.

Labs: This class fulfills a CORE Physical Science Course requirement ONLY when taken concurrently with GEOL 110, Physical Geology Laboratory. This is a separate course, and attendance and grading policies are handled separately.

Cell phone policy: No cell phones allowed in class or exam (latter will incur an F).

Lecture, readings and exam schedule:

Geology 100: Section: 0102 (Fall 2004)

Date	Lecture Topics	Readings
8-31	The Earth in context	Chapter 1
9-2	Studying the Earth's interior	Chapter 1
9-7	Plate Tectonics	Chapter 2
9-9	Earth moves under my feet: where, what, why, consequences	Chapter 2
9-14	Minerals: silicates, oxides, carbonates, metals, etc.	Chapter 3
9-16	Magmas and Igneous rocks	Chapter 4
9-21	EXAM I (chapters 1-4)	
9-23	Sediments, weathering, erosion, and soils	Chapter 5
9-28	Sedimentary rocks, layering and depositional environments	Chapter 5
9-30	Metamorphic rocks & metamorphism	Chapter 6
10-5	Pressure-temperature diagrams, protoliths	Chapter 6
10-7	Volcanism	Chapter 7
10-12	Seismology, earthquakes and earthquake hazards	Chapter 8
10-14	EXAM II (focusing on chapters 5-8)	
10-19	Crustal deformation, mountain building and faults	Chapter 9
10-21	Structural Geology, Geologic maps and graphic conventions	Chapter 9
10-26	Geologic time I: Relative dating	Chapter 10
10-28	Geologic time II: Absolute dating and magneto-stratigraphy	Chapter 10
11-2	Biography of the Earth's Geology	Chapter 11
11-4	Mineral & Energy resources, policy, careers	Chapter 12
11-9	Mass wasting and landslides	Chapter 13
11-11	EXAM III (focusing on chapters 9-13)	
11-16	Stream processes	Chapter 14
11-18	Oceans and Coastal geology	Chapter 15
11-23	Ocean circulation and the environment	Chapter 15
11-25	*** Thanksgiving holiday *****	
11-30	Groundwater	Chapter 16
12-2	Deserts and eolian processes	Chapter 17
12-7	Ice: glaciers, Ice ages and cold environments	Chapter 18
12-9	Global changes: Climate, global cycles, complexity	Chapter 19
12-18	FINAL EXAM -- SATURDAY-- (focusing on chapters 14-19)	10:30-12:30

Essentials of Geology

by Stephen Marshak, W. W. Norton & Co., New York, 2004 (ISBN 0-393-92411-4)

	Chapter titles
Chapter 1	The Earth in context
Chapter 2	The Way the Earth works: plate tectonics
Chapter 3	Patterns in Nature: Minerals
Chapter 4	Up from the inferno: Magma and igneous rocks
Chapter 5	A surface veneer: sediments and sedimentary rocks
Chapter 6	Change in the solid state: metamorphic rocks
Chapter 7	The wrath of Vulcan: volcanic eruptions
Chapter 8	A violent Pulse: Earthquakes
Chapter 9	Crags, cracks, and crumples: Crustal deformation and mountain building
Chapter 10	Deep time: How old is the earth?
Chapter 11	A biography of Earth
Chapter 12	Riches in rock: energy and mineral resources
Chapter 13	Unsafe ground: landslides and other mass movements
Chapter 14	Streams and floods: The geology of running water
Chapter 15	Restless realm: oceans and coasts
Chapter 16	A hidden reserve: Groundwater
Chapter 17	Dry regions: the geology of deserts
Chapter 18	Amazing Ice: Glaciers and Ice ages
Chapter 19	Global change in Earth System