

EARTH 201
SURFACE PROCESSES
Fall Quarter, 2008

Instructor: Brad Sageman (Locy 313)
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Lecture: 9:00 am MWF
Locy 301

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Labs: T2:00-3:50
W3:00-4:50
All labs in Locy 111

Textbooks

LECTURE

Earth: Portrait of a Planet
Marshak, 2008, 3rd Ed.
(Norton & Co. Publ.)

LAB

*Laboratory Manual in Physical
Geology, 8th Edition*, R.M. Busch
(ed.), 2009, AGI/NAGT
(Prentice Hall Publ. Co.)

Field Trip Baraboo, Wisconsin - **Nov 1-2** (Sat. overnight)
Travel and accommodations paid for by NU

Evaluation

•Lectures	Hour exams (3)	(50%)
•Labs	Exercises and quizzes	(30%)
•Field trip	Field trip participation and report	(20%)

All students should review Northwestern University's principles regarding Academic Integrity <http://www.northwestern.edu/uacc/> and Weinberg College policies on Academic Integrity <http://www.wcas.northwestern.edu/advising/academic.html> as any suspicions of possible violations will be referred directly to the WCAS dean's office.

No notes, books, etc., may be used during examinations. Use of electronic devices (e.g., calculators, PDAs, laptop computers, cellular phones, iPods, etc.) during examinations is prohibited. While it is understood that students may benefit from discussing problem sets or other assignments together, ultimately each student is expected to submit his or her own individual work. Copying each other's assignments is unacceptable.

Lab partners who collect data together may submit identical data tables, but each must prepare his or her own individual written lab report. Any material taken from websites, books, journals, or other sources must have its sources clearly cited, and any such material taken verbatim must be clearly identified as quotations. Failure to do so may constitute plagiarism.

*If you cannot participate in a scheduled evaluation assignment for this class you must contact the TA or professor **BEFORE** the absence occurs or receive a grade of "0" for the assignment. Only cases of documented medical/family emergency are exempt.*

LECTURE SCHEDULE

<u>Date</u>	<u>Topics</u>	<u>Reading</u>	<u>Lab</u>
9/24	1) Introduction	Ch. 1,2	No Lab
9/26	2) Overview of Phys. Geology		
9/29	3) Solar System/Earth System	Ch. 1,2	<i>Minerals (3)</i>
10/1	4) Minerals	Ch. 5+Int. A	<i>Ign Rx (4,5)</i>
10/3	5) Igneous Rocks	Ch. 6+Int. B	Lab
10/6	6) Volcanism (<i>Bina</i>)	Ch. 9	<i>Sedimentary &</i>
10/8	7) Sedimentary Rocks I	Ch. 7	<i>Meta Rx (6,7)</i>
10/10	8) Sedimentary Rock II		Lab
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10/13	Exam #1		
10/15	9) Metamorphic Rocks	Ch. 8+pg.227	<i>Interpreting Geologic</i>
10/17	10) Geologic Time	Ch. 12+Int. D	<i>History Lab (8)</i>
10/20	11) Deformation/Mtn. Building	Ch. 11	<i>Structural Geology (10)</i>
10/22	12) River Processes	Ch. 17	<i>& Geol Maps Lab</i>
10/24	13) Oceans and Coasts	Ch. 18	
10/27	14) Desert Processes	Ch. 21	<i>Baraboo Fld Trip Lab</i>
10/29	15) Glacial Processes	Ch. 22	<i>(6,9,11,13,15)</i>
10/31	16) Geology of Baraboo		
11/1-2	Weekend Field Trip (depart Sat. 7:00am)		
11/3	17) Drifting Continents	Ch. 3	<i>Earthquakes (16), Earth</i>
11/5	18) Plate Tectonics	Ch. 4	<i>Struct. (1), Tectonics (2) Lab</i>
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11/7	Exam #2		
11/10	19) Earthquakes	Ch. 10	Baraboo Report
11/12	20) Earth Interior	Int. C, p. 318	workshop
11/14	21) Energy Resources	Ch. 14	
11/17	22) Atmosphere and Climate	Ch. 20	<i>Carbon Cycle & Climate</i>
11/19	23) Global Change/Earth System	Ch. 23	Lab
11/21	24) Research in Earth Science		
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11/24	Exam #3		

TAKE HOME EXERCISES

<u>Wk.</u>	<u>Exercise</u>	<u>Lecture</u>	<u>Chapter</u>	<u>Due</u>
2 -	1.The Goldilocks problem	1-2	1-2	10/3
3 -	2.The Yellowstone hotspot problem	5-6	6, 9	10/10
4 -	3.The Stratigraphic Thickness problem	7-8	7	10/17
5 -	4.The Boundary Age problem	10	12	10/24
6 -	5.The Global Rivers problem	12	17	10/31
7 -	6.The Clast Diameter-Wave Height problem	13	18	11/10
8 -	7.The Spreading Rate vs. Age-Depth Problem	17-18	4	11/17