Geology 109
Andre Lehre
Office Hrs: M 9–11, W 10, Th 1–3
and by arrangement

Spring 2010
162 Founders Hall
826-3165
akl1@humboldt.edu

GEOLOGY 109 SYLLABUS

All readings refer to pages in Marshak: Earth, except for those labeled RM, which refer to readings in Pellant.
PLEASE DO THE INDICATED READING IN THE LAB MANUAL BEFORE COMING TO LAB!!!

Geology 109 website: http://www.humboldt.edu/~geology/courses/geology109
When requested on the site use **name:** geodept **password:** students

DAY	TOPICS	READING
19-Jan	Introduction; scale of geologic time; overall earth model	2-55
21	Overall earth model	56-115
LAB 1	**FIELD TRIP:** Mad River Fault Zone	
26	Earth materials: minerals	119-143; RM 14-26
28	Magmas and igneous rocks	144-181; RM 30-33
LAB 2	Minerals: properties and identification	131-134; Appx B1 - B3; RM 14-17, 20-29
2-Feb	Volcanos	265-299
4	Volcanos and plutons	242-273; 162-168
LAB 3	Igneous rocks	169-171; RM 32-33, 40-43, 180-207
	LAB QUIZ 1: minerals and mineral properties (20 min)	
9	Sedimentary rocks	198-214
11	Reconstruction of geologic history: depositional environments	214-227
LAB 4	Sedimentary rocks	RM 38-41, 44-45, 222-249
	LAB QUIZ 2: igneous rocks and minerals (20 min)	
16	Metamorphic rocks	228-255; RM 34-37
18	Stratigraphy, correlation, measurement of geologic time	402-445
LAB 5	Metamorphic rocks	250-251; RM 34-37, 40-43, 208-219
	LAB QUIZ 3: sedimentary rocks and minerals (20 min)	
23	Weathering processes	183-192
25	Soils and soil formation	193-198
LAB 6	**FIELD TRIP:** Trinidad Beach (rock identification/interpretation)	bring RM
2-Mar	Landslides and other mass movements	557-581
4	**MIDTERM 1 (through geologic time)**	
LAB 7	Reading topographic maps and aerial photos	546-548, 586
	LAB QUIZ 4: rocks and minerals-comprehensive (30 min)	
9	Weather and climate	692-729
11	Runoff processes and floods	583-587, 607-617
LAB 8	**FIELD TRIP:** Blue Lake (landslides and geology)	
16	Spring Break	
18	Spring Break	
23	Streams and their behavior	583-619
25	Groundwater	660-691
LAB 9	Rivers and flooding	587-588, 594, 613-616
	LAB QUIZ 5: Reading topographic maps (45 min)	
30	Glaciers	757-770
1-Apr	Glacial erosion and deposition	771-800
	No Lab due to Chavez holiday	771-800
6	Coastal processes; Movie: Beach, a River of Sand	620-658
8	Sea-level and climatic changes	822-830
LAB 10	**FIELD TRIP:** Big Lagoon (coastal erosion and deposition)	Figs. 18.19 , 18.20 , 18.23, 18.25,18.28, 18.38

DAY	TOPICS	READING
13-Apr	**MIDTERM 2 (through glaciers)**	
15	Wind and deserts	730-756
LAB 11	Geologic maps	367, 372-379, 421-431
20	Geologic structure: tilting and folding of rocks	362-399
22	Geologic structure: joints and faults	328-360
LAB 12	**FIELD TRIP:** Elk Head (simple geologic mapping and interpretation)	424-431
27	Earthquakes: causes and consequences	303-349
29	The earth's interior and the lithosphere	350-361
LAB 13	Earthquakes and seismograms	315-321
4-May	Energy resources	486-519
6	Mineral resources	522-540
	LAB FINAL: comprehensive, but will emphasize geologic and topographic maps (1.5 hours)	
11-May	**FINAL EXAM : Tuesday, May 11, 1020 – 1210**	

Text:	Marshak: Earth-- Portrait of a Planet, 3rd ed	
Lab Manuals	Pellant: Rocks and Minerals, 2nd ed Lab Handouts (given out in class)	
Grading:	Midterm 1	15%
	Midterm 2	15%
	Final	25%
	In-class & homework assignments	10%
	Lab quizzes 1, 2, and 3	3% ea
	Lab quizzes 4 and 5	4.5% ea
	Lab final	12%
	Lab field trips	5% (1% ea)

Grades are assigned using a modified class-average approach using natural breaks in score distribution.

IMPORTANT LAB INFORMATION

If for any reason you must miss a lab:

1) notify the instructor;
2) make up the lab by attending another lab section the same week and/or working on your own in the lab when it is free.

Lab Times

Tuesday	2-5
Wednesday	11–2
Thursday	2-5

GENERAL EDUCATION INFORMATION

The University requires inclusion of the following GE information :

Area B General Education Learner Outcomes

Lower Division Science GE Outcomes for Life Forms and the Physical Universe

1) Students will be able to distinguish a scientific explanation of a phenomenon from a nonscientific explanation.
2) Students will be able to demonstrate their understanding of the basic language and concepts of the science field under study through proper use of the technical/scientific language of that field in the development, interpretation, and application of concepts.
3) Students will be able to critically evaluate conclusions drawn from a particular set of observations or experiments.

COURSE INFORMATION -- GEOLOGY 109 – SPRING 2010

Time/Place:
Lecture: T R, 1100-1220, Science B 133
Lab: Tu 1400- 1650, W 11:00-13:50, or Th 1400- 1650, VMH107
Final Exam: Tuesday May 11, 1020-1210

Instructor: Dr. Andre Lehre
office: Founders Hall 162
email: akl1@humboldt.edu
phone: 826-3165
office hours: M 9–11, W 10, Th 1–3 and by arrangement
furlough days: Jan 15, 22; Feb 5, 19; Mar 12, 26; Apr 9; May 14, 17

Required Texts:
Marshak," Earth: Portrait of a Planet", 3rd edition (2008) ISBN 0-393-93036-X
Pellant, "Rocks and Minerals" (2002) ISBN 0-7894-9106-0

Geology 109 website: http://www.humboldt.edu/~geology/courses/geology109
When requested on the site use **name:** geodept **password:** students

Lab items:
Bring a PENCIL, eraser, ruler with both centimeter and inch scales, and calculator to lab each week. An inexpensive hand lens is useful on field trips and in the rocks and minerals labs.

OVERVIEW
Geology is an integrative discipline that builds on foundations in both the physical and the biological sciences. In the past several decades, two paradigm-shifting advances have revolutionized thinking about the Earth and its features. These two themes, the theory of plate tectonics and the concept of Earth systems science, are interwoven with all of the aspects of geology that we will study in this class.

Geology 109 is a lower division science general education course; as such it is designed to meet the following educational goals:

1) Students will be able to distinguish a scientific explanation of a phenomenon from a nonscientific explanation.
2) Students will be able to demonstrate their understanding of the basic language and concepts of the science field under study through proper use of the technical/scientific language of that field in the development, interpretation, and application of concepts.
3) Students will be able to critically evaluate conclusions drawn from a particular set of observation or experiments.

LOGISTICS
Your attendance and active involvement are essential to your success in this class. Whenever you are absent, arrive late, or leave early, you are inconveniencing your peers and professor, and you are jeopardizing your grade in the class.

You are responsible for keeping up with the assigned reading from the text and lab (rocks and minerals) book. *Read (or skim) the appropriate assignments before coming to class and lab. Lectures will be based on the* reading assignments, but will be designed to supplement, not duplicate, the text. In other words, in lecture we may not discuss everything you read, but you are still responsible for the reading material. In-class exercises may happen any time and will be based on the reading material as well as the previous lectures, so come prepared!

On field trip days, come prepared to work outside regardless of the weather. Wear walking shoes (tennis shoes or hiking boots) and a hat, sweatshirt, rain jacket, or whatever clothing you need to work comfortably outside for the duration of the lab.

There will be no make-up for missed in-class work or field trips. If you miss an exam due to illness notify me immediately by e-mail or phone. An exam missed due to illness must be made up before the exams are returned to the class; practically that means within a week. If you miss an in-class exercise, you will not receive credit for the assignment, but the assignment will be posted on the website so you can catch up with the material by completing it on your own. If you miss a lab, you may catch up with the assigned material by attending a different lab section the same week (space permitting) and/or by working on your own in the lab when the room is free. If you are unable to take one of the mid-term tests or lab tests at the scheduled time, you may take the subsequent test for double credit.

Please do not hesitate to ask questions in class and lab, or to stop by my office hours with questions or comments. I will make every effort to be in my office during my posted office hours or will post a note indicating where I can be found.

If you need special accommodations for class work (extra test time, etc.), you must inform me of your needs, in writing, during the first three weeks of the semester. These arrangements require extra preparation time and it is essential that I have advanced notice in order to make adjustments.

Please make sure that the e-mail address that HSU has on file for you is the e-mail address that you currently use. On occasion, I may send an e-mail to the entire class to inform you about a change in schedule, or an event like an outside speaker you might be interested in hearing. It is important that you are able to receive these e-mail messages.

GRADING

Grades are assigned using a data-adaptive modified class-average approach using natural breaks in the score distribution as grade boundaries. They will be based on:

65% lecture exams, in-class exercises and homework assignments:

55% for exams (15% for each mid-term test, 25% for the final exam)
10% for in-class and homework assignments, (work must be completed by the end of class on the day an in-class exercise is assigned or the day a homework assignment is due in order for you to receive credit)

35% lab exercises and tests:

30% lab quizzes and exams
5% field trips

OTHER INFORMATION MANDATED BY HSU

Catalog Description:

GEOL 109. General Geology (4). Physical geology. Origin and constitution of the earth, internal and external processes that determine crustal and surficial features, and methods in investigating and interpreting earth history. *Weekly: 3 hrs lect, 3 hrs lab.*

Students with Disabilities: Persons who wish to request disability-related accommodations should contact the Student Disability Resource Center in House 71, 826-4678 (voice) or 826-5392 (TDD). Some accommodations may take up to several weeks to arrange. http://www.humboldt.edu/~sdrc/

Academic honesty: Students are responsible for knowing policy regarding academic honesty:
http://studentaffairs.humboldt.edu/judicial/academic_honesty.php or
http://www.humboldt.edu/~humboldt/catalogpdfs/catalog2007-08.pdf

Attendance and disruptive behavior: Students are responsible for knowing policy regarding attendance and disruptive behavior:
http://studentaffairs.humboldt.edu/judicial/attendance_behavior.php

Add/Drop policy: Students are responsible for knowing the University policy, procedures, and schedule for dropping or adding classes. http://www.humboldt.edu/~reg/regulations/schedadjust.html

Emergency evacuation: Please review the evacuation plan for the classroom (posted on the orange signs) , and review http://studentaffairs.humboldt.edu/emergencyops/campus_emergency_preparedness.php for information on campus Emergency Procedures. During an emergency, information can be found campus conditions at: 826-INFO or
http://www.humboldt.edu/emergency