OXFORD COLLEGE
Geology 141 - Physical Geology
Fall 2010

GOALS FOR STUDENTS ENROLLED IN GEOLOGY 141:

Geology 141 (Physical Geology) has been designed for either the geology/environmental studies major or for a student who wants an interesting laboratory science course as part of their liberal arts education. As such, no prior background is assumed or necessary, just a desire to learn and an interest in the natural world. Some of the key elements in the study of geology include the scientific method and observational skills. The course will introduce those early in the semester and continue to reinforce them throughout the rest of the term. At the end of the course students will understand how the scientific method applies to geology. Their observational skills will be considerably improved through the analysis of mineral and rock specimens and landscape features. The study of the Earth brings in a number of the other sciences that have a bearing on geology. Concepts of physics are relevant to plate tectonics, the generation of magma, and metamorphic rocks. Students will see how pressures within the Earth influence these processes. Chemistry is especially useful in the understanding of minerals, rocks, and weathering. Students will gain knowledge of basic chemistry as it is applied to mineral and rock composition and how it relates to weathering. Basic mathematical skills will be mastered in the use and analysis of topographic maps. Physical geology involves the study of the building materials of the Earth. Students will understand minerals and be able to identify some. Students will understand how igneous, sedimentary, and metamorphic rocks form and be able to identify a suite of them. The course also involves the internal processes of the Earth. As such, students will understand plutonism, volcanism, structural deformation, and earthquakes. Surface processes are also important in physical geology and students will gain knowledge of weathering, stream processes, glaciation, and coastal processes. Finally, it is my hope that at the end of the course, students will have developed a deep appreciation for the planet that we live on through an understanding of its geologic nature.

COURSE ANNOUNCEMENTS

Instructor:	Dr. Stephen W. Henderson
Office:	106 Pierce Hall
Office Phone:	(770) 784-8345
Office Hours:	Monday & Wednesday 1:00 – 2:00, Tuesday 9:30 – 12:00, and other times by appointment or walk-in's. I'm usually in my office and appreciate the opportunity to meet with you.

Text: Tarbuck and Lutgens, 2008, The Earth, 9^{9h} ed.

Lab Manual: Busch (ed.), 2009, Laboratory Manual in Physical Geology, 8th ed., (AGI/NAGT).

Organization: The class will meet for lecture three times each week: Monday, Wednesday, and Friday at 9:35 or 10:40. Students will enroll in one of the two laboratory sections that meet from 2:30 – 5:30 on Tuesday or 2:00-5:00 on Wednesday.

COURSE REQUIREMENTS AND GRADING METHODS:

Attendance: All students are expected to attend all scheduled lecture and laboratory sessions. Attendance will be taken. No cuts are allowed in lab. Students who have an unexcused absence in lab will have their final course grade reduced three points per absence. Lab quizzes cannot be made up. A student who has four or fewer lecture absences for the entire semester will receive the addition of two points to the final course average. There are no excused absences. Students having six or more lecture absences will have their final course grade reduced one point per absence starting with the sixth absence.

Being late to class is rude and distracting. Therefore, three late entrances will be considered equal to one absence. If you come in more than 15 minutes tardy, you will be counted absent. If you come in late, it is your responsibility to see me immediately after class to ensure that you are marked tardy and not absent. No adjustments will be made at a later time. If you are continuously tardy, you may be excluded from further classroom attendance. When you are in class, you must be attentive and not disturb others.

Reading Assignments: You must read the text assignments prior to class so that you are best prepared for an in depth understanding of the material presented in lectures. You will be responsible for the text readings on the tests. Prior to laboratory, you must read over the introductory material in the lab manual for that day's exercise. Otherwise, you will find yourself lost and out of favor with your instructor.

Class Etiquette: In class, you should be concentrating on learning. Anything that distracts from this is contrary to the educational process. Therefore, cell phones are to be turned off and cannot be used in class or lab (including as calculators during tests). Bring a calculator to lab.

Grading System: Geology 141 will use the plus-minus grading system. The distribution of grades is as follows:

A(4.0) 93-100	C+(2.3) 77-79
A-(3.7) 90-92	C(2.0) 73-76
B+(3.3) 87-89	C-(1.7) 70-72
B(3.0) 83-86	D+(1.3) 67-69
B-(2.7) 80-82	D(1.0) 60-66
	F 59 and below

Evaluation:

Highest Three Half-Tests 30%
(Lowest Half-Test grade is dropped)
Lecture Half-Test #1 on 9/13
Lecture Half-Test #2 on 10/1
Lecture Half-Test #3 on 10/29
Lecture Half-Test #4 on 11/15

Final Exam for O9A Section: 15 Dec 9-12 am	15%
Final Exam for 10A Section: 10 Dec, 2-5 pm	
6 Laboratory Quizzes	12%
3 Laboratory Reports	6%
Mt. Arabia Lab Report	7%
Lab Practical Exam #1 on 10/19 or 10/20	15%
Lab Practical Exam #2 on 11/30 or 12/1	10%
Class Participation	5%

APPLICATION OF HONOR CODE TO GEOLOGY 141:

The Honor Code of Oxford College applies to Geology 141. All quizzes, tests, and exams will be done individually with no non-sanctioned additional materials or help. The laboratory exercises can be done with other students and with the instructor's help. The Mt. Arabia Lab Report must be done using your own notes taken on the fieldtrip. If you are unsure whether or not an action may result in an honor code violation, ask the instructor first. The Honor Code at Oxford College is quite serious.

TENTATIVE LECTURE SCHEDULE AND READING ASSIGNMENTS:

Day	Topic for the Week	Text Assignments
W 8/25	Introduction, Basic Principles, and Geologic Time	Chapters 1 & 9
F 8/27		
M 8/30		
W 9/1		
F 9/3		
M 9/6	Labor Day - No Class	
W 9/8	Plate Tectonics	Chapter 2
F 9/10		
M 9/13	**Lecture Half-Test #1**	
W 9/15		
F 9/17		
M 9/20	Minerals	Chapter 3
W 9/22		
F 9/24	Igneous Rocks & Plutonic Activity	Chapter 4 & 5
M 9/27		
W 9/29		
F 10/1	**Lecture Half-Test #2**	
M 10/4		
W 10/6		
F 10/8	Volcanic Activity	Chapter 5
M 10/11	Fall Break - No Class	

W 10/13		
F 10/15		
M 10/18		
W 10/20		
F 10/22	Crustal Deformation	Chapter 10
M 10/25		
W 10/27		
F 10/29	**Lecture Half-Test #3**	
M 11/1	Running Water	Chapter 16
W 11/3		
F 11/5		
M 11/8	Glaciation	Chapter 18
W 11/10		
F 11/12		
M 11/15	**Lecture Half-Test #4**	
W 11/17		
F 11/19		
M 11/22	Shorelines	Chapter 20
W 11/24	Thanksgiving Break – No Class	
F 11/26	Thanksgiving Break – No Class	
M 11/29		
W 12/1	Earthquakes	Chapter 11
F 12/3		
M 12/6		

LABORATORY SCHEDULE FOR GEOLOGY 141:

Meeting	Tue.	Wed.	Exercises	Lab Work Turned In?	Quiz?
1	8/31	9/1	Observations & the Scientific Method	Yes	No
2	9/7	9/8	#8 Dating	Yes	No
3	9/14	9/15	#3 Minerals	No	Yes
4	9/21	9/22	#5 Igneous Rocks & Volcanoes	No	Yes
5	9/28	9/29	#s 6 & 7 Sedimentary & Metamorphic Rks	No	Yes
6	10/5	10/6	#9 Topographic Maps	No	Yes

7	10/19	10/20	**Lab Practical #1**		
8	10/26	10/27	Mount Arabia Field Exercise	Yes	No
9	11/2	11/3	#12 Groundwater	No	Yes
10	11/9	11/10	#15 Coastal Processes	Yes	No
11	11/16	11/17	#16 Earthquakes	No	Yes
12	11/30	12/1	**Lab Practical #2**		