

OXFORD COLLEGE

Geology 250 – Mineral Resources, Energy and Power

Spring, 2004

GOALS OF THE COURSE

Mineral Resources, Energy and Power will give students an understanding of scientific investigation as it relates to the geologic origin of the Earth's mineral and energy resources. The emphasis is on the geologic nature of nonmetallic, metallic, and energy resources. Students will also gain knowledge and appreciation of the historic development, uses, environmental concerns, and future potential of these resources. When this course is over, students will have considerable insight when they use a metallic object or turn on a light.

COURSE ANNOUNCEMENTS

Instructor: Dr. Stephen W. Henderson

Office: 106 Pierce Hall

Office Phone: (770)784-8345

Office Hours: Monday and Wednesday (8:30-9:30, 10:45-12:00) and other times by appointment or stopping by. I'm usually in my office and available.

Text: Craig, Vaughan, and Skinner, 2001. Resources of the Earth, 3rd edition
Field trip notes will be kept in a required composition notebook.

Organization: The class will meet for lecture two times each week: Tuesday and Thursday at 10:00 a.m. The laboratory section is from 2:30 – 5:30 p.m. on Tuesday and includes two Saturday field trips.

Attendance: All students are expected to attend all scheduled lecture and laboratory sessions. Attendance will be taken. No unexcused cuts are allowed in lab. Tuesday field trips and one of the two Saturday field trips are required. Students who have an unexcused absence in lab will have their final grade reduced 3 points per absence. A student who has three 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 five or

more lecture absences will have their final course grade reduced one point per absence starting with the fifth absence.

Honor Code: The Oxford College Honor Code applies to this course. If unsure whether or not how a particular assignment falls under the Honor Code, **ask** the professor prior to doing the assignment.

Grading System: Geology 250 will use the plus-minus grading system. The distribution of grades is as follows:

A	93-100	C+	77-79
A-	90-92	C	73-76
B+	87-89	C-	70-72
B	83-86	D+	67-69
B-	80-82	D	60-66
		F	59 and below

Evaluation: Lecture work will comprise 55% of your final average, lab will comprise 40%, and class participation in the entire class is 5%. It is broken down as follows.

Highest half-test	20%
(lowest half-test grade dropped)	
Lecture half-test #1 on 1/29	
Lecture half-test #2 on 2/19	
Lecture test on 3/25	15%
Final exam on 5 May @ 9:00 a.m.	20%
Lab Test on 2/24	10%
Field Trip reports	15%
Lab reports	5%
Group report	10%
Class participation	5%

Tentative Lecture Schedule:

Day	Topic	Text Chapters
Th 1/15	Introduction to resources and plate tectonics	Chapter 1
Tu 1/20	Minerals	Chapter 2
Th 1/22	Rocks	
Tu 1/27	Industrial rocks	Chapter 10
Th 1/29	Lecture half-test #1	

Tu 2/3	Igneous-based Mineral Resources	Chapters 7, 8, 9, 10
Th 2/5		

Tu 2/10	
Th 2/12	

Tu 2/17	Sedimentary-based Mineral Resources
Th 2/19	Lecture half-test #2

Tu 2/24	Metamorphic-based mineral resources
Th 2/26	

Tu 3/2	Weathering-based mineral resources
Th 3/4	

<i>SPRING BREAK</i>	<i>SPRING BREAK</i>	<i>SPRING BREAK</i>	<i>SPRING BREAK</i>
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Tu 3/16	Iron Industry	Chapter 3
Th 3/18	Industrial Revolution	

Tu 3/23	Environmental Impacts	Chapter 4
Th 3/25	Lecture Test	

Tu 3/30	Fossil fuels	Chapter 5
Th 4/1		

Tu 4/13		
Th 4/15	Nuclear power	Chapter 6

Tu 4/20	Renewable energy
Th 4/22	

Tu 4/27	
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Laboratory Schedule for Geology 250:

Lab Day	Topic	Assignments
1/20	Industrial minerals identification	Study
1/27	Industrial rocks identification	Study
2/3	Building stones: including campus and cemetery tour	Field trip report

2/10	Trip to Oxford Quarry?	Field trip report (if we go)
2/14	Trip to Cartersville Weinman Mineral Museum and New Riverside Ochre Co.,	Field trip report
2/17	Films on silver and copper mining	Discussion
2/24	LAB TEST	
2/28	Trip to Huber Kaolin mine	Field trip report
3/2	No Lab	
3/9	No Lab (Spring Break)	
3/16	Subsurface geology and Earth resource exploration	Lab report
3/23	No Lab	
3/30	Hydrocarbon exploration	Group report
4/6	Crude oil distillation	Lab report
4/13	Trip to Scherer Electric Generating Plant	Field trip report
4/20	Trip to South face Energy Institute	Field trip report
4/27	No Lab	