

## **OXFORD COLLEGE**

### **Geology 250 – Mineral Resources, Energy and Power**

**Spring, 2006**

#### **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, 3<sup>rd</sup> edition  
Field trip notes will be kept in a required composition notebook.

Lab Manual: Rimstidt & Craig, 2002, Exercises in Resources Geology, 4<sup>th</sup> ed.

Organization: The class will meet for lecture two times each week: Tuesday and Thursday at 1:00 p.m.(01J). 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 70% of your final average, lab will comprise 25%, 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 2/7	
Lecture half-test #2 on 2/28	
Lecture test on 4/4	15%
Final exam on 9 May @ 2:00 p.m.	20%
Lab Test on 2/14	10%
Field Trip reports	10%
Lab reports	5%
Group oral presentation	15%
Class participation	5%

#### **Tentative Lecture Schedule:**

<b>Day</b>	<b>Topic</b>	<b>Text Chapters</b>
Th 1/19	Introduction to resources and plate tectonics	Chapter 1
Tu 1/24	Minerals	Chapter 2
Th 1/26	Rocks	

Tu 1/31 Th 2/2	Industrial rocks	Chapter 10
Tu 2/7 Th 2/9	Lecture half-test #1 Igneous-based Mineral Resources	Chapters 7, 8, 9, 10
Tu 2/14 Th 2/16		
Tu 2/21 Th 2/23	Sedimentary-based Mineral Resources	
Tu 2/28 Th 3/2	Lecture half-test #2 Metamorphic-based mineral resources	
Tu 3/7 Th 3/9	Weathering-based mineral resources	

***SPRING BREAK      SPRING BREAK      SPRING BREAK      SPRING BREAK***

Tu 3/21 Th 3/23	Iron Industry Industrial Revolution	Chapter 3
Tu 3/28 Th 3/30	Environmental Impacts	Chapter 4
Tu 4/4 Th 4/6	Lecture Test Fossil fuels	Chapter 5
Tu 4/11 Th 4/13	Nuclear power	Chapter 6
Tu 4/18 Th 4/20	Renewable energy	
Tu 4/25 Th 4/27		
Tu 5/2		

Laboratory Schedule for Geology 250:

<b>Lab Day</b>	<b>Topic</b>	<b>Assignments</b>
1/24	Industrial minerals identification	Exercise 1
1/31	Industrial rocks identification	Exercise 2
2/7	Building stones: including campus and cemetery tour	Exercise 2 & Field trip report
Sat. 2/11	Trip to Cartersville Weinman Mineral Museum	Field trip report
2/14	Lab Exam	
2/21	Ores and mines	Exercise 7
2/28	Movie: The Prize	
3/7	World Oil Resources	Exercise 3
3/21	Hydrocarbon exploration	Exercise 4
Sat., 3/25	Georgia Marble Co., Tate	Field trip report
3/28	No Lab	
4/4	Crude oil distillation	Lab report
4/11	Trip to Scherer Electric Generating Plant	Field trip report
4/18	Group Presentations	
4/25	Trip to South Face Energy Institute	Field trip report
5/2	No Lab	