

SYLLABUS

Fall, 2005

Course	Geology 103 - Environmental Earth Science
Instructor	Dr. William Pirkle
Office	225 Sciences Building
Meeting Schedule	Lecture 10:50 - 12:05 TTH Rm. 200 Sciences Bldg. Laboratory 001 1:40 - 4:30 T Rm. 212 Sciences Bldg. Laboratory 002 1:40 - 4:30 Th Rm. 212 Sciences Bldg.
Conference Times	9:30 - 11:00 MW; 12:15 - 1:15 Th Other times by appointment
Email	Pirkle@sc.edu
Texts	Lecture - <u>Environmental Geology</u> , 8th edition, by E. A. Keller Laboratory - <u>Environmental Issues</u> , 3rd edition, by Astwood and Carpenter

COURSE OUTLINE

- I. Earth Materials and Processes
- II. Geological Hazards
 - A. River Flooding
 - B. Landslides
 - C. Earthquakes
 - D. Volcanoes
 - E. Coastal Hazards
- III. Human Interaction with the Environment
 - A. Hydrology and Human Use
 - B. Waste Management
- IV. Minerals, Energy, and Environment
 - A. Mineral Resources and Environment
 - B. Energy Resources and Environment

Objective	To introduce some of the major environmental issues of the day and provide an opportunity to acquire the technical background, in geology, necessary to understand these issues.
Emphasis	The scientific analyses of major environmental issues with special emphasis on their geology and hydrogeologic aspects.
Assessment Methods	By means of exams, written laboratory exercises and group problem solving activities, students are given an opportunity to demonstrate understanding of environmental issues and the scientific principles by which the environmental issues may be addressed.

Grading Policy	<p>Lecture - 75%</p> <p>20% each, two exams (Sept. 20, Oct. 25)</p> <p>10% poster (research) presentation (Wed., Nov. 9, tentative)</p> <p>25% final exam (Tuesday, Dec. 13, 11:00 a.m.)</p> <p>Laboratory - 25%</p>
Extra Credit Opportunities	<p>A total of 20 points may be earned for various extra credit activities. Extra credit points are added to your final exam grade. Extra credit activities will be announced in class and on Blackboard. Extra credit assignments typically are due the next class period after the scheduled activity.</p>
Attendance	<p>Regular attendance is vital to fulfilling responsibilities in this class. There will be no make up classes or laboratories. Arrangements for assignments missed due to an excused absence must be made within one week of the excused absence. Appropriate documentation is required.</p>
Make-up Exams	<p>Make-up exams will only be given under extenuating circumstances in accordance with University policy. Appropriate documentation is required. Make-up exams may be of a different format than regularly scheduled exams.</p>
Late Assignments	<p>Late assignments typically are lowered one letter grade per day late.</p>
Classroom Department	<p>Please make every effort to be on time to class. Late arrivals disrupt class and make it difficult for others to hear while entering. Turn off cell phones while in class or lab. No eating in class or lab. Please be courteous to and considerate of other class members.</p>
Disability Policy	<p>If you have a physical, psychological, and/or learning disability that might affect your performance in this class please contact the Office of Disability Services, 126A B&E, (803) 641-3609, as soon as possible. The Disability Services Office will determine appropriate accommodations based on medical documentation.</p>

**Tentative Schedule
Geology 103
Fall, 2005**

Assignments in Keller, 8th Edition, Environmental Geology, to be read before and after class.

DATE	ASSIGNMENTS	TEXT CHAPTERS
Aug. 18	Introduction	1
23	Fundamental Principles	1
25	Earth Materials & Processes	2
30	Natural Hazards	4
Sept. 1	Rivers and Flooding	5
6	Rivers and Flooding (continued)	5
8	Landslides and Related Phenomena	6
13	Landslides and Related Phenomena (continued)	6
15	Earthquakes	7
20	EXAM I	
22	Earthquakes (continued)	7
27	Volcanoes	8
29	Volcanoes (continued)	8
Oct. 4	Coastal Hazards	9
6	Water	10
11	Water (continued)	10
13	Fall Break	
18	Water Pollution and Treatment	11
20	Water Pollution and Treatment (continued)	11
25	EXAM II	
27	Waste Management	12
Nov. 1	Work on Research Presentation	
3	Waste Management (continued)	12
8	Mineral Resources	14
10	Mineral Resources (continued)	14
15	Mineral Resources (continued)	14
17	Energy Resources	15
22	Energy Resources (continued)	15
24	Thanksgiving – No Class	
29	Energy Resources (continued)	15
Dec. 1	Energy Resources (continued) and Course Review	15

Final Exam: 11:00 a.m., Tuesday, December 13, Room 200

**Fall, 2005
Tentative Schedule**

Lab 001 - 1:40 - 4:30 T, Rm. 212 Sci. Bldg. Lab 002 - 1:40-4:30 Th, Rm. 212 Sci. Bldg.
Laboratory Manual : Astwood and Carpenter, *Environmental Issues*, 3rd edition

			Lab Manual Page
Aug.	23, 25	Introduction - What Should/Would You Do?	1
	30, 1	Population Growth	11
Sept.	6, 8	Sand River - Field Trip	Handout
	13, 15	Urban Land Use	63
	20, 22	Coastal Land Use	75
	27, 29	Geologic Hazards	Handout
Oct.	4, 6	Aiken Water Supply – Field Trip	15
	11, 13	Fall Break – No Labs	
	18, 20	Horse Creek Waste Water Treatment Plant - Field Trip	19
	25, 27	Chem Nuclear Low Level Radioactive Waste Disposal – FT	Handout
Nov.	1	No lab	
	3	Solid Waste Disposal - FT	Handout
	8	Solid Waste Disposal - FT	Handout
	10	Locating Mineral Resources	51
	15	Locating Mineral Resources	51
	17	Using Mineral Resources to Build Cities- Downtown Aiken FT	Handout
	22	Using Mineral Resources to Build Cities- Downtown Aiken FT	Handout
	24	No lab (Thanksgiving recess)	
	29	Energy Use - Cost of Energy	45
Dec.	1	Energy Use - Cost of Energy	45

Grading Policy: You will be able to earn up to 10 points per laboratory for a possible total of 130 points. Exercises will be group problem solving activities. Your paper will be graded on completeness, thoroughness, correctness and creativity. Laboratory counts 25% of the overall course grade.

Lab Policies: Policies regarding attendance, make-up work and disability needs are the same in lab as in lecture.

Field Trips: Wear outdoor clothing. Long pants and good walking shoes are recommended. All trips will be made in USCA vehicles.

Extra Credit Opportunities (20 point max. added to lecture final exam)

- a) Nov. 5 (Saturday) - Congaree Nat'l. Monument (10 pt. max.)
(Leave USCA 8:15 a.m., return approximately 3:00 p.m.)
- b) Nov. 29/Dec. 1 - lab project on "Rainbow Warrior" (10 pt. max.)
- c) Environmental seminars - e.g. CSRA Geological Society (5 pt. each max.)
(CSRA Geological Society meets the last Tuesday of each month usually at 7:00 p.m. in Room 120 Nursing Building, USCA)