PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

THE ENVIRONMENT W/ LAB
GEOL1300

Class Hours: 3.0 **Credit Hours: 4.0**

Laboratory Hours: 3.0 **Revised: Spring 05**

Catalog Course Description:

A study of the Earth' s environment and the natural and anthropogenic impacts that affect the environment. A review of Earth' s geology provides a basis for discussing environmental issues stemming from the rapid increase in world population and the associated demands for resources and energy. Focus is on current environmental issues such as water and air pollution, global warming, managing waste discharges, energy production, and how to manage change to ensure a high quality environment for generations that follow. Environmental issues will be further explored in weekly laboratory exercises.

Entry Level Standards:

Students should have good note-taking, reading, and writing skills. The course is open to first and second year students. The ability to use the Internet to locatepertinent environmental information is helpful.

Prerequisites:

GEOL 1040; no prerequisite for career/technical majors or certificate students

Textbook(s) and Other Course Materials:

Keller, E. A. *Introduction to Environmental Geology* 3rd ed. Prentice Hall, New Jersey. 2004

I. Week/Unit/Topic Basis:

Week	Topic
1	Lecture: Introduction/Fundamental Concepts of Environmental Geology (Ch. 1); Minerals and Rocks (Ch. 3) Lab: Mineral identification
2	Lecture: Mineral Resources (Ch.12); Earth Processes and Natural Hazards (Ch. 4) Lab: Rock identification
3	Lecture: Soils and Environment (Ch. 14); Slope Processes, Landslides, and Subsidence (Ch. 8) Lab: Soil properties/rock and mineral identification
4	Lecture: Slope Processes, Landslides, and Subsidence (Ch. 8); Rivers and Flooding (Ch. 7); Water Resources (Ch. 10) Lab: pH analysis of water and soil

5	Lecture: Exam I; Rivers and Flooding (Ch. 10); Water Resources (Ch. 10) Lab: Analysis of soil and water
6	Lecture: Water Resources (Ch. 10); Water Pollution (Ch. 11) Lab: Rock and mineral identification and soil properties; Lab quiz
7	Lecture: Water Pollution (Ch. 11); Earthquakes and Related Phenomena (Ch. 5) Lab: Speaker and Computer lab project
8	Lecture: Internal Structure of Earth and Plate Tectonics (Ch. 2); Volcanic Activity (Ch. 6) Lab: Speaker and Computer lab project
9	Lecture: Volcanic Activity (Ch. 6); Coastal Processes (Ch.9) Lab: Speaker and Computer lab project; Lab report due
10	Lecture: Exam II; Coastal Processes (Ch. 9); Energy Resources (Ch. 13) Lab: Speaker and Computer lab project
11	Lecture: Resources (Ch. 13); Air Pollution (Ch. 15) Lab: Speaker and Computer lab project
12	Lecture: Air Pollution (Ch. 15); Global Climate Change (Ch. 16) Lab: Speaker and Computer lab project ; project presentation due
13	Lecture: Global Climate Change (Ch.) 16 Lab: Speaker and computer lab project
14	Lecture: Review and Project Presentations Lab: Project presentations
15	Final exam

NOTE: The above schedule is subject to instructor modification as needed.

II. Course Objectives*:

A. Develop an environmental awareness through the synthesis of anthropogenic and natural forces. IV.2, IV.3

B. Understand the natural processes that are responsible for major catastrophic events such as flooding, landslides, and volcanic activity. I.5, VII.3

C. Appreciate the importance of good management practices for our air, water, and land resources. IV.2, IV.3

D. Understand the natural forces causing continual environmental changes on a global basis. I.5, VII.3

E. Understand the need for land use planning and the major environmental laws that regulate our use of land and other natural resources. IV.2, IV.3

F. Understand the geologic and environmental effects on human health. I.5, IV.2, IV.3

G. Collect and interpret geologic laboratory data.

H. Develop an understanding of the scientific method and applications in geology and

everyday life.

*Roman numerals after course objectives reference TBR's general education goals.

III. Instructional Processes*:

Students will:

1. Prepare short research papers. *Communication Outcome, Information Literacy Outcome*

2. Participate in classroom discussions which challenge the students' ability to think creatively and visualize complex spatial and mathematical relationships to solve problems. *Communication Outcome, Numerical Literacy Outcome, Problem Solving and Decision Making Outcome, Active Learning Strategy*

3. Emphasize individual and corporate environmental responsibilities in written assignments and discussions. *Communication Outcome, Personal Development Outcome, Transitional Strategy*

4. Interpret geology related information and determine its validity.

*Strategies and outcomes listed after instructional processes reference Pellissippi State's goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*:

Upon successful completion of this course, the student should be able to:

1. Describe the cultural aspects of a society that are responsible for its environmental actions. A

2. Describe the Fundamental Concepts of environmental geology. A,B

3. Describe the geological processes that are responsible for the creation and modification of earth materials. B,D

4. Describe the formation of soils and their engineering properties. B,D

5. Discuss the cause, consequences, and control of natural processes such as floods, landslides, earthquakes, volcanoes, hurricanes, and coastal hazards. B

6. Discuss the connection between water quality and human health. C,E,F

7. Discuss the natural and anthropogenic factors that contribute to water pollution. A,B,C

8. Discuss waste treatment processes. C,E

9. Determine what constitutes a hazardous waste and what effects do hazardous wastes have on human health. C,F

10. Discuss the environmental consequences of economic and energy policies and how our mineral resources are particularly affected. C,F

11. Describe the cause and effects of air pollution. C,D,F

12. Describe the connection between human health and the natural geologic environment. F

13. Discuss the cause and potential impacts of a long-term change in global weather. D,F

14. Describe the importance of land use and long-range land use planning in the management of our natural resources. C,D,E,F

15. Discuss the purpose of major environmental legislation and what federal or state agency has responsibility for enforcing the legislation. C,D,E,F

16. Correlate laboratory observation with theoretical concepts presented in lecture. G,H

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures: 65% of grade

Four examinations are scheduled as shown on the class schedule and will consist of essay questions, short answer questions, and definitions. One exam may be made up if the student has a valid excuse for missing the exam, but it must be made up within one week from the date it was given.

B. Laboratory Expectations:

See Week/Unit/Topic/Basis section for schedule of assignments.

C. Field Work: 10% of grade

Unscheduled, short quizzes may be given. They will cover the material for that day or the previous class. Quizzes may not be made up. Participation in classroom discussions is important. A portion of the class will be used for discussion of current environmental issues or other environmental issues that are appropriate to the class.

D. Other Evaluation Methods: 25% of grade

Written Assignments:
Four papers will be required as shown on the class schedule. Each paper must be a minimum of four pages in length, double spaced. They are to be neatly typed on 8½ by 11 inch, 20 pound or better paper and have a professional appearance. There must be a cover page containing the title of the report, the students name and course name, and the date. The cover page is to be followed by the report followed by a list of at least two references excluding the course textbook. The references must be listed in one of the acceptable styles found in style manuals or English composition textbooks. The student is strongly encouraged to consult with the writing tutor in the Learning Center for assistance in preparation of these reports.

E. Grading Scale:

90-100	A
86-89	B+
80-85	B
76-79	C+
70-75	C
60-69	D
0-59	F

VI. Policies:

A. Attendance Policy:

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course (Pellissippi State Catalog). Individual departments/programs/disciplines, with the approval of the vice president of Academic and Student Affairs, may have requirements that are more stringent.

B. Academic and Classroom Misconduct:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices: Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments. In addition to other possible disciplinary sanctions that may be imposed as a result of academic misconduct, the instructor has the authority to assign either (1) an F or zero for the assignment or (2) an F for the course.

C. Accommodations for Disabilities:

If you need accommodations because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please inform the instructor immediately (privately after class or in the instructor' s office).

To request accommodations, students must register with Services for Students with Disabilities Office located in J.L. Goins Administration Building, Room 127 or 131or by phone: (865) 539-7153 or(865) 694-6751 Voice/TTD.