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 locate pertinent environmental information is helpful.

Prerequisites:

GEOL 1040; no prerequisite for Career Program majors

Textbook(s) and Other Course Materials:


I. Week/Unit/Topic Basis:

<table>
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<th>Week</th>
<th>Topic</th>
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| 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 Goals*

The course will:

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. Expected Student Learning Outcomes*:
The student will 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

* Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

IV. 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:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>90-100</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
</tr>
<tr>
<td>B</td>
<td>80-86</td>
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<tr>
<td>C+</td>
<td>77-79</td>
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<tr>
<td>C</td>
<td>70-76</td>
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<tr>
<td>D</td>
<td>60-69</td>
</tr>
<tr>
<td>F</td>
<td>0-59</td>
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</tbody>
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V. Policies:

A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

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.
• Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
• Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one’s own work.
• Taking an exam for another student.
• Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
• Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

C. Accommodations for Disabilities:

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. Disability Services may be contacted by sending email to disabilityservices@pstcc.edu, or by visiting Alexander 130. More information is available at http://www.pstcc.edu/sswd/.