

COURSE PROFICIENCY OUTLINE

ENVIRONMENTAL SCIENCE – 380

5 Credits

Purpose

Primarily offered as a third year requirement or as an elective science class to juniors and seniors who are strongly interested in pursuing an environmentally based class.

This course will emphasize energy, ecology, natural resources, human population and land use, which will be applied to local and global issues. Previously learned skills will be a foundation that they will be able to build on. This class will focus on hands-on activities, current event discussions, and field trips.

I. Student Outcomes 5.1, 5.2, 5.4, 5.5, 5.10

- A. Develop an overall awareness of local and national environmental issues.
- B. Promote the importance of learning about environmental and related subjects.
- C. Develop an understanding of the procedures and real-life scientific methodologies used to solve common environmental problems and environmental health problems through the application of environmental and related subject matter skills.
- D. Stimulate interest to take more of an active role in protection of our natural resources.
- E. Further develop a student's analytical thinking and technical writing skills.
- F. Gain experience working with partners and teams with various backgrounds and experiences to solve common problems.
- G. Develop an understanding of environmental laws and regulations.
- H. Stimulate an interest in conducting research projects and professional careers in Environmental Science.
- I. Develop the knowledge and skills necessary to make educated decisions on our community's groundwater problem.

II. Content Outline 5.1, 5.2, 5.3 5.4 5.5, 5.7, 5.8, 5.10

Some topics may be covered in greater depths than others depending on local events and as to the teacher's discretion.

- 1. Introduction – Humans and the Global Environment
- 2. Environmental Ecology – Global Ecosystems, Local Communities and Populations
- 3. Natural Resources – Discuss resources obtained from soil, water, air, forests, and conservation of these resources.
- 4. Human Impacts – Global warming, acid rain, sea level, ozone, marine pollution, conservation and preservation.
- 5. Energy – Renewable, non-renewable, and alternative energy sources
- 6. Environmental Policy and Decision Making – Environmental law, environmental health problems, ethics, economics and activist groups
- 7. Technology – Modern integration to all areas of Environmental Science
- 8. Career Development – Related to Environmental Science occupations
- 9. Oceanography – Currents, tides and wave motion and their impact on the coastline.

III. Activities and Materials

- A. Text - Environmental Science, Scott Foresman, 1999.
- B. Classwork
 - 1. Lecture, discussion, demonstrations, notetaking, audio-visual, and regular tests and quizzes will be utilized.
 - 2. Learned skills will continue to be developed through reading and writing with emphasis on interpretation
- C. Hands-On Investigation
 - 1. Case studies with problem solving strategies emphasized.
 - 2. Laboratory investigations and development.
 - 3. Field trips to further investigate related topics.
 - 4. Computer skills utilized with an emphasis on internet research.
- D. Assignments
 - 1. Readings – text and other sources
 - 2. Written answers to questions
 - 3. Laboratory and case study reports utilizing analysis of real world problems.

IV. Evaluation

- A. Students will be expected to complete classwork and homework learning assignments, laboratory work and reports, and make up missed work whenever it is practical to do so.
- B. Students will be expected to demonstrate a level of proficiency in all of the goals and objectives of the course within the previously defined content and process areas.
- C. The evaluation of student proficiencies shall consist of tests and quizzes, written assignments and reports, lab reports, and the teacher's regular observations of the student's proficiencies, involvement and learnings in laboratory activities and in the classroom environment.
- D. Students will take a comprehensive final examination. This exam will count as 20% of the final grade.
- E. The final grade represents the teacher's professional judgment of the student's performance and all of the aforementioned activities and/or requirements are included in the evaluative process.

Reviewed and revised: August 2010