**Environmental Science 2012-2013**

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**Course Description**

The goal of the Environmental Science course is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them.

Environmental science is interdisciplinary; it embraces a wide variety of topics from different areas of study. Related areas of study include the social sciences for understanding human relationships, perceptions and policies towards the environment, engineering focuses on design and technology for improving environmental quality. It integrates physical and biological sciences, which includes Ecology, Physics, Chemistry, Soil Science, Geology, Atmospheric Science and Geography. Yet there are several major unifying constructs, or themes, that cut across the many topics included in the study of environmental science. The following themes provide a foundation for the structure of the Environmental Science course:

1. Science is a process.
A.  *Science is a method of learning more about the world.
B.  Science constantly changes the way we understand the world.*
2. Energy conversions underlie all ecological processes.
A.  *Energy cannot be created; it must come from somewhere.
B.  As energy flows through systems, at each step more of it becomes unusable.*
3. The Earth itself is one interconnected system.
A.  *Natural systems change over time and space.
B.  Biogeochemical systems vary in ability to recover from disturbances.*
4. Humans alter natural systems.
A.  *Humans have had an impact on the environment for millions of years.
B.  Technology and population growth have enabled humans to increase both the rate and scale of their impact on the environment.*
5. Environmental problems have a cultural and social context.
A.  *Understanding the role of cultural, social and economic factors is vital to the development of solutions.*
6. Human survival depends on developing practices that will achieve sustainable systems.
A.  *A suitable combination of conservation and development is required.
B.  Management of common resources is essential.*

**Course Prerequisites**

Earth Science and Biology

**Resources**

* *Environmental Science for AP,* A. Friedland and R. Relyea, 2012

**Materials**

* 3 ring binder, binder paper, writing utensils, colored pencils and flash drive (recommended)

**Expectations**

* BE PREPARED! Complete all assignments and assigned reading on time. Bring materials to class.
* Come to school. Be on time. School attendance policy applies to all students.
* Participate! Ask questions, be a part of discussions, provide input.
* Be respectful to instructor, classmates, supplies, the earth, etc.
* Be safe. Follow all lab safety procedures and rules for fieldwork. Work carefully in the lab and in the field.
* All school rules apply (dress code, cell phones, etc.)

**Course Structure**

Reading, writing, laboratory work, fieldwork, field trips, projects, presentations, research, discussions, videos

**Grades**

Tests/Quizzes (including Essential Standards Assessments) – 25%

Labs/Field Work/Activities – 25%

Class work/Homework – 40%

Final Exam – 10%

**Tests/Quizzes**

You will have a lot of quizzes over assigned reading material. There will be a test for each unit that consists of multiple-choice questions. The multiple-choice questions will be from class assignments, reading, and notes.

**Binder**

Please keep all completed work in your binder chronologically (in page and date order). Occasionally a college or university will ask to see your class work before giving credit for the course. Keep all your work-in-progress in your binder so you do not lose them. They will also be useful for your unit assessments.

**Current Event Reports =**

Each student will complete one current events report per semester (2 reports total). You can take articles from newspapers, magazines, or online publications. This will be done out of class on your own. For each report, you need at least two articles concerning the same topic. Make sure your article is from a reliable source (i.e. NOT blogs or other opinion-based media). Present the information orally to the class (don’t read off the paper!) and hand in a printed copy of the articles. Your report only needs to be a few minutes long. Your classmates will provide feedback after your report. Your Current Event Reports Log needs to be completed for each report, including your own. There will be signups for presentations, so sign up for your time slot early!

**Course Outline (Order of topics may change through the semester**

***Semester One***

*Quarter 1*

* Introduction
* Energy
* Ecology
* Population

*Quarter 2*

* Atmosphere
* Atmospheric pollution
* Climate Change

***Semester Two***

*Quarter 3*

* Soil
* Land
* Water
* Geology

*Quarter 4*

* Pollution
* Sustainability/Environment & Society