

## ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE

Dr. Birnbaum

Phone: 897 – 6700 ext. 30137

Office: Room 245

E – Mail: [Steven.Birnbaum@wcsdny.org](mailto:Steven.Birnbaum@wcsdny.org)

Course Code: S687

Credit: 1

Rank Weight: 1:06

Prerequisite: Earth Science and Living Environment

Recommendation: Student must achieve a final average of 85% or higher in Earth Science and Living Environment: Chemistry preferred or taking concurrently.

Students are expected to take the AP Environmental Science exam in May. Any student who does not take the AP exam will be re-registered into a non-AP level course number.

### **Course Description:**

The goal of the AP 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/or preventing them.

Environmental Science is interdisciplinary; it embraces a wide variety of topics from different areas of study. 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 AP Environmental Science course.

1. Science is a process.
  - Science is a method of learning more about the world.
  - Science constantly changes the way we understand the world.
2. Energy conversions underlie all ecological processes.
  - Energy can-not be created, it must come from somewhere.

- As energy flows through systems, at each step more of it becomes unusable
3. The Earth itself is one interconnected system.
    - Natural systems change over time and space.
    - Biogeochemical systems vary in ability to recover from disturbances.
  4. Humans alter natural systems.
    - Humans have an impact on the environment for millions of years.
    - 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.
    - Understanding the role of culture, social and economic factors is vital to the development of solutions.
  6. Human survival depends on developing practices that will achieve sustainable systems.
    - A suitable combination of conservation and development is required.
    - Management of common resources is essential.

**WHAT THE STUDENT NEEDS TO DO TO BE SUCCESSFUL:**

1. Keep up with the material and study. There will be frequent quizzes. If you receive less than 80% you will be assigned extra homework.
2. Do your homework.
3. Take notes during class and outline the readings in the text.
4. Use your resources. I will be developing a website with power-points and links.
5. Come to class. The number 1 reason students do poorly is lack of attendance. If you are not here you will miss important discussions, labs, and tests.
6. Refrain from cheating. You may think it is helping you get ahead, but it is your chance of passing the AP test.

**SYLLABUS:**

Unit 1 Humans in the Environment	Chapters 1,2,3	Duration 4 wks.
Unit 2 The World We Live In	Chapters 4,5,6,7	Duration 5 wks
Unit 3 A Crowded World	Chapters 8,9	Duration 3 wks
Unit 4 The Search For Energy	Chapters 10,11,12	Duration 4 wks
Unit 5 Our Precious Resources	Chapters 13 to 18	Duration 7 wks
Unit 6 Environmental Concerns	Chapters 19 to 23	Duration 6 wks
Unit 7 Tomorrow's World	Chapter 24	Duration 1 wk

**THE TEXT:**

Environment, Sixth Edition, Raven and Berg, Copyright 2008, Harcourt College Publishers

**THE EXAM: May 2014**

The A.P. Environmental Exam created by the College Board and Educational Testing Service, will be administered in May, 2014. The exam is three hours in length and consists of two parts: a multiple choice section comprised of 100 questions and forming 60% of the grade, and a free response section comprised of four free – response questions forming 40% of the grade. The multiple choice section is designed to cover the breadth of your knowledge and understanding of environmental science and includes thought provoking problems and questions based on fundamental ideas from environmental science as well as questions based on the recall of basic facts and major concepts. The free – response section emphasis the application of principles in greater depth; you will need to organize answers to broad questions, demonstrating reasoning and analytical skills, as well as the ability to synthesize material from several sources into a coherent essay.

**LABORATORY and FIELD INVESTIGATIONS:**

Laboratory and field investigations are designed to complement the lecture portion of the course by providing opportunities to learn about the environment through first hand observations, to test concepts and principles which have been introduced in class, to explore specific issues and problems in greater depth, and to gain awareness of the importance of confounding variables which exist in the real world. Investigations will be diverse and will include indoor laboratory activities, outdoor activities, as well as field experiences outside the confines of the campus. The labs are designed to invite students to think critically, to observe environmental systems, to develop and conduct well designed experiments, to utilize appropriate techniques and instrumentation, to analyze and interpret data, to present data orally and in the form of statistical and graphical presentations, to apply concepts to the solution of environmental problems, to form conclusions and to propose further study.

**GRADING:**

Students will be evaluated through performance on chapter exams, announced quizzes, laboratory investigations and lab reports, homework, group projects, and writing assignments.

Exams and Quizzes	55%
Labs	20%
Homework	15%
Presentations	10%

I have read, understand and agree to the above syllabus.

Printed Student Name \_\_\_\_\_

Student Signature \_\_\_\_\_

Parent Signature \_\_\_\_\_

Parent Phone Number \_\_\_\_\_

Parent E Mail \_\_\_\_\_