

AP Environmental Science Course Information

Class Participation and Homework (10%) Attendance is very important in this class due to the very “nature” of the subject. Class participation discussions are usually followed by a reflection sheet. Your class participation grades are determined by your attendance, your contributions, and by the quality of answers on reflection sheets completed throughout the quarter.

If you are legally absent or legally late to class and you would like to make up the missed class work we did, you can stay after school on Tuesdays or Wednesdays in Room W27 to make up any class work. Any late work will be accepted before or at one week prior to the end of that quarter for half credit.

Lab Reports (10%) Labs will be written up in a specific format. You will be given a rubric before the first lab. The final project is an Authentic Research Project, which will count more than a regular lab. Labs will count for 10% of your grade. 10 points are taken off for each day a lab report is late.

Students must be able to:

- develop and conduct well-designed experiments
- utilize appropriate techniques and instrumentation
- analyze and interpret data
- apply concepts to the solution of environmental problems
- make conclusions and evaluate their quality and validity
- propose further questions for study
- communicate accurately and meaningfully about observations and conclusions
- Read for total comprehension
- Write for total communication

Quizzes and Graded Classwork (20%) The quizzes will be announced one day ahead and they will require you to study the chapter in the textbook, the notes from class, or handouts from class. The graded classwork will consist of free response questions or multiple choice and these will also be graded out of 10 points. The quizzes and graded classwork will be worth 20% of your average. Student work will be handed back in a timely manner.

Tests and Projects(50%) The tests will be announced approximately one week in advance. They will consist of multiple-choice questions and one or two free response questions. The tests will be worth 50% of your grade. There is a mid-term and a final exam which consists of actual AP Env. Science exam questions.

The Final Project for fourth quarter can be either a long term educational project or an authentic research project.

THE COURSE 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 were provide as a foundation for the structure of the AP Environmental Science course from 1999-2018:

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 cannot 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 had 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 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 suitable combination of conservation and development is required.
 - Management of common resources is essential

Based on the Understanding by Design® (Wiggins and McTighe) model, this course framework provides a clear and detailed description of the course requirements necessary for student success.

The framework specifies what students must know, be able to do, and understand, with a focus on big ideas that encompass core principles and theories of the discipline. The framework also encourages instruction that prepares students for advanced environmental science coursework.

Big Ideas

The big ideas serve as the foundation of the course and allow students to create meaningful connections among concepts. They are often overarching concepts or themes that become threads that run throughout the course. Revisiting the big ideas and applying them in a variety of contexts allows students to develop deeper conceptual understanding. Below are the big ideas of the course and a brief description of each.

BIG IDEA 1: ENERGY TRANSFER

Energy conversions underlie all ecological processes. Energy cannot be created; it must come from somewhere. As energy flows through systems, at each step, more of it becomes unusable.

BIG IDEA 2: INTERACTIONS BETWEEN EARTH SYSTEMS

The Earth is one interconnected system. Natural systems change over time and space. Biogeochemical systems vary in ability to recover from disturbances.

BIG IDEA 3: INTERACTIONS BETWEEN DIFFERENT SPECIES AND THE ENVIRONMENT

Humans alter natural systems and have had 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.

BIG IDEA 4: SUSTAINABILITY (STB)

Human survival depends on developing practices that will achieve sustainable systems. A suitable combination of conservation and development is required. The management of resources is essential. Understanding the role of cultural, social, and economic factors is vital to the development of solutions.

AP Environmental Science Course and Exam Description UNITS/TOPICS Each unit is broken down into teachable segments called topics. The topics contain the required content for each topic. Units Exam Weighting on the AP EXAM

Units Of Study

Unit 1: The Living World: Ecosystems 6–8%

Unit 2: The Living World: Biodiversity 6–8%

Unit 3: Populations 10–15%

Unit 4: Earth Systems and Resources 10–15%

Unit 5: Land and Water Use 10–15%

Unit 6: Energy Resources and Consumption 10–15%

Unit 7: Atmospheric Pollution 7–10%

Unit 8: Aquatic and Terrestrial Pollution 7–10%

Unit 9: Global Change 15–20%