

# Environmental Science

## Course Syllabus



### Supervising Teacher

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### Course Description:

*Pre-requisite: C+ or better in Biology or instructor permission. College preparation class for those interested in a one semester class toward a natural resource career pathway and/or a one semester class benefiting those interested in the health science careers. This course will focus on ecological principles, including population, economics, environmental health, natural resources and their impact on society.*

### Recommended Textbook Options:

*HARCOURT - HOLT Environmental Science 2006 SE I-DEA TOP PICK  
MCGRAW-HILL - GLENCOE Environmental Science: A Study of Interrelationships 2006 I-DEA TOP PICK*

### End of Course Assessment:

#### Option #1:

*This course has 4 anchor assignments for each semester (8 total). These may be used as the required assessment piece for this course.*

#### Option #2:

*Students may complete a test on environmental science knowledge and skills. The pacing guide in this syllabus plus a separate study guide will be the basis for questions on this assessment. There will be a final at the end of each semester.*

### Course Evaluation:

#### **A. Semester Examination or Anchor Assignments: 40% of semester grade**

*A comprehensive semester examination will be given during exam week each semester. Semester examinations will be given by a supervising instructor at a previously agreed upon location, most often a resource center.*

*Anchor assignments must be completed and received on or before the due date in order to receive credit.*

#### **B. Home Participation and Portfolio: 60% of grade**

*Home participation is to be determined by the home teacher. The participation may include, but is not limited to, textbook activities, quizzes, unit tests, projects, oral reports, or research papers. Grades for home participation will be submitted to the contact teacher who will then forward a copy to the supervising instructor for semester grade tabulation. A portfolio of student work which may include copies of some of the laboratories will be presented to the contact teacher once per semester.*

### Pacing Guide

The topics and standards for this course have been divided between the two semesters.

Semester 1 (Fall)	Semester 2 (Spring)
Scientific Investigation	Natural Resources
Environmental Systems	Watersheds and Wetlands
Ecosystems	Energy in the Earth System
Populations	Environmental Quality

In order to fulfill this pacing requirement, the recommended texts have been broken down by chapter. Covering the chapters in the order listed will insure that all topics on the final exam will be covered during the appropriate semester.

***Harcourt Holt: Environmental Science***

<b>Semester 1(Fall)</b>	<b>Semester 2 (Spring)</b>
Chapters 1-2	Chapters 11-15
Chapter 3	Chapters 6-7
Chapters 4-5	Chapters 17-18
Chapters 8-9	Chapters 16, 19, 20-21

***McGraw-Hill/Glencoe: Environmental Science – A Study of Interrelationships***

<b>Semester 1(Fall)</b>	<b>Semester 2 (Spring)</b>
	Chapters 12-16
Chapters 1-3	Chapters 6, 16
Chapters 4-6	Chapters 9-11
Chapters 7-8	Chapters 17-20

**I-DEA Student Honor Code:**

With any form of valid proof of dishonesty with regard to student work or testing, the instructor may elect from a range of actions. Academic dishonesty could lead to a zero grade for the assignment or even failure for the entire course following consultation between the instructor, Secondary Supervisor, and Director.

All students must adhere to the **Honor Code:**

***“On my honor, I will maintain the highest possible standards of honesty, integrity and personal responsibility. This means I will not lie, cheat or steal, and as a member of this academic community, I am committed to creating an environment of respect and mutual trust.”***

## IDAHO CONTENT STANDARDS: ENVIRONMENTAL SCIENCE

### Standard 1: Nature of Science

Goals	Objectives					
<b>Goal 1.1 Understand Systems, Order, and Organization</b>	11-12.ENV.1.1.1 Explain the scientific meaning of system, order, and organization.	11-12.ENV.1.1.2 Apply the concepts of order and organization to a given system.				
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	11-12.ENV.1.2.1 Use observations and data as evidence on which to base scientific explanations.	11-12.ENV.1.2.2 Develop models to explain concepts or systems.	11-12.ENV.1.2.3 Investigate and describe how different models can be used to demonstrate the same thing.	11-12.ENV.1.2.4 Use a model to predict change.	11-12.ENV.1.2.5 Develop scientific explanations based on knowledge, logic, and analysis.	
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	11-12.ENV.1.3.1 Measure changes that can occur in and among systems.	11-12.ENV.1.3.2 Analyze changes that can occur in and among systems.	11-12.ENV.1.3.3 Measure and calculate using the metric system.			
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	11-12.ENV.1.6.1 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations.	11-12.ENV.1.6.2 Formulate scientific explanations and models using logic and evidence.	11-12.ENV.1.6.3 Carry out scientific procedures, using appropriate measurements and careful observations.	11-12.ENV.1.6.4 Critically evaluate information to distinguish between fact and opinion when responding to information.	11-12.ENV.1.6.5 Communicate and defend a scientific argument in a clear and understandable manner.	11-12.ENV.1.6.6 Explain the differences among observations, hypotheses, and theories.
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	11-12.ENV.1.7.1 Explain that scientists may work in teams and some may work alone, but all communicate extensively with each other.					
<b>Goal 1.8: Understand Technical Communication</b>	11-12.ENV.1.8.1 Construct and interpret various representations of data, including data tables, graphs, and scientific visualizations.	11-12.ENV.1.8.2 Be able to use appropriate technology, such as the geographic information systems (GIS), to view, interpret, and manipulate large datasets.				

### Standard 3: Biology

Goals	Objectives				
<b>Goal 3.3: Understand the Relationship between Matter, Energy, and Organization to Trace Matter as it Cycles and Energy as it Flows through Living Systems and between Living Systems and the Environment</b>	11-12.ENV.3.3.1 Understand that energy is transferred between animals and plants between trophic levels. Students will identify the sun as the primary energy source for most ecosystems on Earth.	11-12.ENV.3.3.2 Describe how animals and plants are interconnected in ecosystems in ways other than energy transfer. Understand that these relationships can be beneficial or harmful and can include non-living (abiotic) parts of the ecosystem.	11-12.ENV.3.3.3 Understand that disturbances to ecosystems can be manmade or natural, and can cause anything from small changes to catastrophic demise of an ecosystem.	11-12.ENV.3.3.4 Be able to describe the process of ecological succession in different ecosystems.	11-12.ENV.3.3.5 Define an ecosystem and biome and identify the primary types of biomes found on Earth.

### Standard 4: Earth and Space Systems

Goals:	Objectives	
<b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b>	11-12.ENV.4.2.1 Identify and illustrate natural cycles within systems (e.g., water, climate, geological changes)	11-12.ENV.4.2.2 Explain the internal and external energy sources of the earth

### Standard 5: Personal and Social Perspectives; Technology

Goals:	Objectives						
<b>Goal 5.1: Understand the Relationship between Science and Technology and Develop the Abilities of Technological Design and Application</b>	11-12.ENV.5.1.1 Use appropriate technology in laboratory procedures for measuring, recording, and analyzing data.	11-12.ENV.5.1.2 Explain how science and technology are pursued for different purposes.					

Goals:	Objectives						
<b>Goal 5.2: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	11- 12.ENV.5.2.1 Explain why water is a precious resource and identify the components of the water cycle.	11- 12.ENV.5.2.2 Identify sources of water pollution and be able to distinguish between point-source and non- point-source pollution.	11- 12.ENV.5.2. 3 Conduct water quality testing on local water sources.	11- 12.ENV.5.2.4 Identify the primary air pollutants and explain their origins and effects.	11- 12.ENV.5.2.5 Relate global warming to human activities.	11- 12.ENV.5.2.6 Explain how humans have affected species biodiversity, pollution and habitat destruction.	11- 12.ENV.5.2.7 Analyze the principle natural hazards of different regions of the state and understand the geological basis of those hazards.
<b>Goal 5.3: Understand the importance of natural resources and the need to manage and conserve them.</b>	11- 12.ENV.5.3.1 Compare and contrast global populations trends and evaluate policies of various local governments as they try to maintain sustainability.	11- 12.ENV.5.3.2 Analyze the importance of soils, how they are formed, and conservation methods used to preserve soils.	11- 12.ENV.5.3. 3 Explain how public lands are utilized and how suburban sprawl affects ecosystems.	11- 12.ENV.5.3.4 Compare and contrast the practices that affect the use and management of natural resources.	11- 12.ENV.5.3.5 Illustrate ways to recycle, reduce and re- use solid waste and identify alternate products for everyday items that are biodegradable and recyclable.	11- 12.ENV.5.3.6 Evaluate the various energy forms and explore alternative sources of energy (e.g., wind, hydroelectric, natural gas, etc.).	11- 12.ENV.5.3.7 Describe the difference between renewable and nonrenewable resources.