Environmental Science Honors: A Case-Based Approach

Text: The Habitable Planet: A Systems Approach to Environmental Science
Online textbook: http://www.learner.org/courses/envsci/
Copies of the textbook are posted in the online classroom

Course Description
What are the tensions between human demands for resources and the requirements of historic ecosystems? This course uses a systems approach to understanding environmental processes. Presented with case studies, students use a variety of activities to develop new knowledge and skills ranging from direct experience with scientific content through the analysis of authentic scientific datasets. Targeted laboratory experiences, prediction about and analysis of science concepts through models and hands-on activities are integral in this class. Content-specific readings and online discussions support student learning. Students reflect and evaluate their experiences in the form of a final project that has practical applications.

Course Goals
The main goals of the Environmental Science Honors course are to enable students to develop a conceptual framework for understanding the earth's environment as an interconnected system and to gain an understanding of current environmental health, energy, and climate issues. Students will also develop an understanding of earth as a unique planet in the solar system, the role of the atmosphere and oceans in making the earth habitable and in creating climate, the importance of land and water resources, the role of agriculture in environmental interactions, the impact of human population dynamics on environmental health, the value of biodiversity and conservation, and the challenges posed by energy, environmental pollution, and global climate changes.

Instructor Biography:

Mrs. Nuño currently teaches AP Biology, Chemistry, and Physics at an independent school in Massachusetts. She has as a B.S. in environmental health from UCLA, an M. A. in biological science from UC Santa Barbara, a certificate in online education from UCLA, and extensive course work in science education. Prior to moving to the east coast, she taught AP Biology, chemistry, and physics in a private school in Los Angeles. She now lives on a tree farm in southern Vermont!

SEMESTER ONE

All unit assignments are due by the 15th of each month!

Month	Topic/Focus	Readings & Tutorials	Problem Sets & Tests Submit Online	Labs and Case Studies Submit to Dropbox
1	Orientation to Online Learning	Introduce Yourself in the Student Lounge		
	Unit 1: One Earth	Chapter 1	Unit 1 Problem Set Unit 1 Test	Unit 1 Video Case Study Scientific Method Lab
2	Unit 2: Atmosphere and Oceans	Chapter 2 Chapter 3	. Unit 2 Problem Set Unit 2 Test	Unit 2 Video Case Study Carbon Lab Dissolved Oxygen Lab
3	Unit 3: Ecosystems	Chapter 4	Unit 3 Problem Set Unit 3 Test	Unit 3 Video Case Study Communities & Biomes Lab Model Ecosystems Lab
4	Unit 4: Human Population and Health	Chapter 5 Chapter 6	.Unit 4 Problem Set Unit 4 Test	Unit 4 Video Case Study Ecological Footprint Lab Demographics Lab Population Biology Lab Disease Lab
End of Semester One				

SEMESTER TWO

All unit assignments are due by the 15th of each month!

Month	Topic/Focus	Readings & Tutorials	Problem Sets & Tests Submit Online	Labs and Case Studies Submit to Dropbox
5	Unit 5: Land and Water Resources	Chapter 7 Chapter 8	Unit 5 Problem Set Unit 5 Test	. Unit 5 Video Case Study Soil Analysis Lab Water Loss Lab Transpiration Lab
6	Unit 6: Biodiversity	Chapter 9	Unit 6 Problem Set Unit 6 Test	Unit 6 Video Case Study Ecology Lab Lesson of the Kaibab Lab Zoo Field Trip
7	Unit 7: Energy	Chapter 10	Unit 7 Problem Set Unit 7 Test	Unit 7 Video Case Study Energy Usage Lab Insulation Lab Power Plant Lab
8	Unit 8: Pollution	Chapter 11	Unit 8 Problem Set Unit 8 Test	Unit 8 Video Case Study Air Pollution Lab Water Quality Lab
9	Unit 9: Global Climate	Chapter 12 Chapter 13	Unit 9 Problem Set Unit 9 Test	Unit 9 Video Case Study Final Project