

## AP ENVIRONMENTAL SCIENCE 2014/15

**Text:** Friedland and Relyea, Environmental Science for AP (plus other readings)

**Lab fee:** \$20 (covers field trips)

**Methods:** Instruction consists of lectures, discussions, readings, and lab/field work, providing students with a wide variety of field experiences, including on-going studies of local bird and amphibian populations and ecological restoration. This work is done in conjunction with the City Parks Department and with SOLV, Oregon's largest non-profit organization dedicated to "protecting this treasure we call Oregon". In addition to my own expertise, we are occasionally assisted in the field by professional ecologists and ecological restoration consultants, to whom we are greatly indebted.

**Course Overview:** The AP Environmental Science course is designed to be the equivalent of an introductory college course (one semester) in environmental science. The goal of the AP Environmental Science course is to provide students with the scientific principles, concepts, and methodologies required to understand the inter-relationships of the natural world, to identify, analyze, and evaluate environmental problems and risks both natural and human-made, and to examine alternative solutions for resolving and/or preventing them. **Considerable emphasis is placed on field investigations as well as on laboratory study.** Students will apply field research techniques for ecosystem monitoring and restoration in a variety of ecosystems. **Supplies needed:** boots, clothing for being outdoors in various weather conditions (we have some to share)

**Requirements:** *be here; be involved; follow the golden rule!*

Some specifics:

1. In addition to in-class field work, you are **required** to do **one** out-of-class field event (or lecture event) per semester. (More is extra credit!)
2. We are outdoors OFTEN. Sometimes the weather is nice; sometimes it isn't. Prepare accordingly. You might want to have your own boots/jacket (we have some community gear).
3. Things to check daily :
  - Your school email – I will send reminders
  - The Moodle account for class – assignments will be posted.
  - Class web page – assignments and field opportunities
4. Test "re-take" opportunities will be offered to improve grade; must be completed within 2 weeks.

**Course Goals:**

1. Become ecologically literate. Learn how to live well in a place without degrading it (i.e, learn to live sustainably.)
2. Evaluate civilization; change it where necessary.

**Access:** I am available daily before, as well as at lunch. By appointment I may be available after school as well. Contact me at [daviesj@wlwv.k12.or.us](mailto:daviesj@wlwv.k12.or.us) and find my website on the WLHS homepage: <http://www.wlhs.wlvv.k12.or.us/Page/3430>

**Grading:** 50% of the grade will be determined by exams. The other 50% will be made up of field work, readings, homework and labs. You can succeed in this class by showing up ready to participate and with the homework complete, with a positive attitude and a commitment to doing some regular studying. Nightly studying, review of the material covered in class, and doing the extra problem sets and readings offered will assist you in being prepared for the AP Exam in May. Extra credit may be earned by attending (more than the required) field events or lectures outside of class. These opportunities will be posted on the class web page. Every effort will be made to keep grades up to date on the on-line Pass system, at least every other week.

<b>Grade</b>	<b>Percentage (%)</b>
<b>A</b>	<b>90-100%</b>
<b>B</b>	<b>80-89%</b>
<b>C</b>	<b>70-79%</b>
<b>D</b>	<b>60-69%</b>
<b>F</b>	<b>0-59%</b>

### **Academic Ethics**

Academic dishonesty on any assignment, test, or quiz will result in 0 for that assignment or test/quiz (see pg. 13 in student handbook).

### **Course Syllabus:**

**Summer Assignment:** Read Daniel Quinn, Ishmael;  
View the film “An Inconvenient Truth”

### **Unit 1: Environmental Issues, Environmental History, Critical Thinking, Science, Politics, and Sustainability**

#### Readings:

Friedland chapters 1, 2, 19, and 20; plus excerpts from:  
Jared Diamond, Collapse  
The Millenium Ecosystem Assessment  
Intergovernmental Panel on Climate Change (IPCC)

#### Lecture topics:

State of the world and how we came to be this way  
Critical thinking and the nature of science  
What we know, and how we know it  
Ecological worldviews  
Environmental Politics and History  
The laws of thermodynamics  
Ecological restoration: how to fix what we have broken

Videos:

The Home Planet (PBS film from “the Miracle Planet” series)  
Life Force: photosynthesis and the laws of thermodynamics  
Collapse featuring Jared Diamond  
NOVA/Frontline, “What’s Up with the Weather?”  
Frontline, “Climate of Doubt”  
River Ways

Lab/Field investigations:

What are the native trees and shrubs of this area? Use of dichotomous keys in exploring Camassia  
What are the native birds of this area? Cornell Lab’s Project Feederwatch  
How do we measure biodiversity? The Shannon-Wiener index  
Eagle Creek (Salmon) field trip  
Begin ecological restoration projects at various locations  
[ongoing through the year: removing non-native invasive plant species; planting native plants to prevent soil erosion and create habitat; monitoring water quality and species presence (birds, amphibians) to assess the success of the projects]