

AP Environmental Science Syllabus

Jennifer Drew

Email: Outside of school you or your parents can reach me at jennifer_drew@wrsd.net

Room: D210

Course Description

The AP Environmental Science course is designed to be the equivalent of a one-semester, introductory college course in environmental science. Unlike most other college introductory-level science course, environmental science is offered from a wide variety of departments in college. Depending on the department offering the course, different emphases are placed on various topics. Some courses are rigorous courses that stress scientific principles and analysis, and that often include a laboratory component; other courses emphasize the study of environmental issues from a sociological or political perspective rather than a scientific one. This AP Environmental Science course has been developed to be most like the former; as such it is intended to enable students to undertake, as first-year college students a more advanced study of topics in environmental science or alternatively, to fulfill a basic requirement for a laboratory science and thus free time for taking other courses.

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 and sustainable solutions for resolving and/or preventing them.

Textbook

The text is *Living in the Environment*, 13th Edition, by G. Tyler Miller

Curriculum

Semester 1

Ch & Resource

Introduction to Environmental Science 2 wks
Theory, history, philosophy, terminology

Ch 2 Environmental History
Ch 1 Environmental Problems
Video: The Lorax

Earth Systems and Resources 4 wks
Geology
Biogeochemical cycles
Forestry / Dendrochronology

Ch 3 Science, Systems, Matter and energy
Ch 4 Ecosystems, energy flow, matter cycling
Ch 10 Geology, processes, hazards, and Soil

Labs: Rocks and the Rock cycle lab, Glaciation in MA, Tree ring coring and analysis, Forest Watch* data collection begins

The Living World 5 wks
Ecology
Climate / Biomes
Energy flow in ecosystems
Evolution/Adaptation

Ch 7 Aquatic Ecology
Ch 8 Community Ecology
Ch 6 Climate, Biomes, weather
Ch 5 Evolution and biodiversity

Labs: Food webbing activity, Exotic invasion!

Population dynamics 2 wks
Human population

Ch 12 The human population

Lab: Exponential growth- Dice lab, modeling human population

Semester 2

Toxicology/Pollution 4 wks
 Atmosphere and Air pollution
 Water pollution/ Wastewater
 Solid Waste / Hazardous Waste

Ch 11 Risk, Toxicology, Human Health
 Ch 19 Water Pollution
 Ch 21 Solid and Hazardous Waste
 Ch 17 Air and Air Pollution
 Ch 20 Pesticides and Pest Control

Labs: Ozone level analysis, Trash collection Project, Septic System activity, Water quality testing lab

Land and Water Use 4 wks
 Hydrology / Water supply
 Land Use planning
 Soil

Ch 25 Urban Land Use and Development
 Ch 14 Water resources
 Ch 13 Food Resources
 Ch 20 Pesticides and Pest Control

Labs: Water cycle model lab, Where does your water come from? Stream water flow lab, Land use planning Lab, Soil profile lab, Soil texture and nutrients lab

Energy resources and Consumption 3 wks
 Fossil fuels
 Nuclear
 Alternative energy

Ch 15 Geologic Resources- Nonrenewable
 Ch 16 Energy Efficiency and Renewable
 Ch 26 Economics, Environment, Sustainability
 Ch 27 Politics, Environment, Sustainability

Lab: Personal energy audit & Bioremediation with Oil-eating bacteria

Global Change 4 wks
 Climate Change
 Speciation / Biodiversity
 Endangered species/ Conservation

Ch 18 Climate Change and Ozone Loss
 Ch 22 Sustaining Wild Species
 Ch 23 Sustaining Terrestrial Biodiversity
 Ch 24 Sustaining Aquatic Biodiversity
 Ch 28 Environmental Ethics

Lab: Forest Watch collection, Ozone testing, Everyday Exotic lab, Biodiversity column lab

Students end the year reviewing for the AP Environmental Science exam. The students will have a mock AP test (half the size, 50 MC 2 FRQ) as their final exam for the course. Students will also do a review packet provided by me and do the chapter summaries from the text.

Student Evaluation

1. Homework is to be complete by the following day of assignment unless otherwise stated. Homework is due at the beginning of class; half credit will be given same day as long as the work has not been gone over.

2. No late work is accepted or graded. The only exception is with larger assignments/projects, which will be docked 10% for every day late. If there are questions on homework they should be asked and addressed in class. Extra help is always available; just make an appointment with me.

3. Tests will always be announced. Quizzes may or may not be announced. Labs will also be an integral part of the course. Projects may also be assigned; more info will be given at a later date.

Students' grades are based on a total points system. All tests are 100 points; labs (including field and case studies) vary depending on time spent, difficulty, etc. There will also be quizzes and homework assignments.

Tests: 60% multiple choice, approx 40% essay/FRQ 2 or 4 questions

Labs: Labs are a critical part of the class and are graded as such. Students will complete a variety of individual as well as group labs. Some labs will be in class as more paper based activities, while other labs will be outside doing field observation, data collection and analysis.

- Lab Make-ups: If you MUST miss a lab you will have **one calendar week** to make up the lab. Arrangements should be made with me to make up the lab after school. See me for special circumstances.

Homework and Quizzes

Short quizzes are given at the end of every chapter to ensure student progression and building of key concepts.

- HW/Classwork Make-ups: Homework not handed in because of legitimate absences is subject to the same rules as missed tests. It is **your** responsibility to get missed assignments, handouts and worksheets distributed in your absence.

Extra help: I am always available, though my schedule will change, if you want to come by please let me know so I can make sure I'm here to help you. I will be in D201 after school.

Expectations:

1. Mutual respect for myself and other students. This should be a fun class for everyone.
2. Attend class every scheduled meeting on time. Be in your assigned seat and ready to work when the bell rings. 3 tardies = OFFICE detention.
3. **NO Cheating**. If caught cheating I will collect your paper, you will receive a zero, and I will call home. Cheating is considered **receiving and giving** answers. Cheating is also considered having the exact same answers in lab &/or any group work.
4. Come to class prepared!! Bring all the materials you need (that includes paper and pencil), do your homework and class assignments, and go to the bathroom before class.
5. Actively engage in class participation and ask questions. Your questions add value to the class, help you learn, and teach me things too.

6. Follow all class rules: Watch your mouth; Follow the student handbook; Electronic devices will be confiscated if heard or seen; Do not eat or drink in class unless you have been given special permission. WATER is permitted ONLY in the classroom section and **Follow all lab safety rules!!** If unsafe practices are routinely disobeyed you will be removed from the lab and possibly the course. Be safe. **Especially Outside**

7. Always try your best, show me you want to be here and learn, and take advantage of all avenues of success.

Absences: All work that was due on the day you were absent should be passed in according to the student handbook. This means, if you were absent the day an assignment was due; I expect to see it upon your return to school. If you were absent on the day of a test, you will be expected to make up the test in class immediately upon your return. If you miss a review day before the test, you can choose to take the test on test day or on the following day. See me for special circumstances.

Once you have read this syllabus please sign and date below to indicate that you are aware of all of the information contained within it, and therefore also responsible for all information. Please give this to your parent/guardian to read and sign as well. The bottom portion of this sheet will be collected and kept as a record

✂----- ✂
I have received and understand the terms outlined in this syllabus.

Student Name: _____ Date: _____

Signature: _____

Parent/Guardian Signature: _____ Date: _____