**ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE**

**(APES)**

Course Syllabus 2019-2020

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Text Book: Friedland, Relyea , and D. Courard-Hauri. Environmental Science for AP\* 2012 Fourth Edition

**Introduction:**

AP Environmental Science (APES) is designed to be the equivalent of a one-semester, introductory college course in environmental science. Unlike most other college science courses, environmental science is offered from a wide variety of departments including geology, biology, chemistry, physics, geography and environmental studies. This AP course has been developed to provide you with an integrated approach to the numerous disciplines involved in environmental sciences, and to incorporate many lab and field components, as well as social and political themes.

**Course Description:**

The APES course is designed to provide students with the scientific principles, concepts and methodologies required to understand the interrelationships of the natural world, to identify and analyze the environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and preventing them. **There are several unifying constructs of themes that provide the foundations for the structure of the APES course:**

1. Science is a process

2. Energy conversions underlie all ecological processes

3. The Earth itself is one interconnected system

4. Humans alter natural systems

5. Environmental problems have a cultural and social context

6. Human survival depends on developing practices that will achieve sustainable systems

**The Exams:**

The AP Exam is 100 Multiple Choice questions in 90 minutes and four essays in 90 minutes. The essays include one document-based question (DBQ), one data set (quantitative) question, and two more general synthesis and evaluation questions. Test date: **Monday, May 11th , 2020 12:00pm.** For more info please visit <https://apstudents.collegeboard.org/dates/ap-environmental-science-exam>

**Class Format:**

This course will meet every day for 50 minutes for the entire year and will count as one AP credit. We will strive to stay on the same topic. Tests will be around the same time. (Some test dates will need to be revised on the pacing guide.) It may be necessary to stay after class or come in on the day you don’t have APES to finish a lab. The class will be delivered in several ways including but not limited to: lecture, powerpoints, handouts, projects, labs, demos, etc. Many of the documents used in class will be available to you on our online group. **Be prepared to take notes and be an active participant in class discussions and all activities.**

All of your scheduled tests in class will be simulations of the final AP exam, with multiple choice and essay (FRQ) portions. Other assignments will include essay sets, laboratory pre-labs and write ups, group work, computer simulations and possible webquests, quantitative analysis and data sets, research and oral presentations by individuals and teams**. The lab group or team will be an integral part of field and lab work, and cooperation and participation is essential.** You are expected to do all assignments on time and late will only be accepted if there is an excused absence or at 10% off each day and must be completed within a reasonable time. According to school policy you are allowed to turn late work in however many days you were out plus one. We will adhere to this rule, only if it was an **excused absence**. You will be required to keep an organized binder, which should include a tab **for notes, handouts/worksheets, homework, labwork/reports, essays and tests/quizzes.** **Remember this is a COLLEGE level course with very high expectations.**

You will have an option to RE-TAKE your objective portion of any test! This means every student has the opportunity to re-test on the multiple choice section on the Monday **or Tuesday following a test but not the free response section**. This will be done before or after school; NOT DURING! Essays will not be re-scored. **I will only count the re-test if you decide to take it, NOT the higher of the two grades!** If you are absent, please plan to take your make up test on the Monday or Tuesday after the test. No exceptions will be made for this policy.

You will not have homework every night, but **you will find the required reading and overall work load while difficult, is manageable.**  Again, no late assignments will be accepted without excused absences. **It is important to stay motivated all year, especially towards the exam date when many people have lots of AP exams to prepare for.** While my level of expectations for each of you is high, I do realize most of you are young and new to AP classes. I will do everything I can to help you succeed but my efforts can only go so far…. You must meet me in the middle. Once you are in college remember that you will be responsible for most of your own learning. Expect to do quite a bit of reading on your own outside of class. We are on a time crunch from the start and while I will try to cover everything in detail there may be things that we briefly cover in class that will require you to do deeper reading on your own at home. With that being said I do plan on celebrating important scientific dates (such as “mole day”). **Try to enjoy the learning process and each other!**

**Grading:**

I adhere to the school-wide grading AP scale, and do not curve grades. You will have tests over many chapters at a time (refer to the pacing guide), formal and informal lab reports, problem solving and data analysis, multiple choice question sets, essays, computer simulations, independent research projects, current events and Internet based assignments. On some occasions homework will be graded on participation, however don’t expect that to be the norm. Expect to get graded on correctness. You are expected to keep all papers when returned. As previously mentioned, you will maintain an organized binder. Your grade will be determined by cumulative point totals converted to a percent grade each marking period.

Grades will be weighted as follows: **Exams & Quizzes 50% of your grade. Labs & Projects 25% and homework/class activities 25%**

While you are expected to do your own work, there may be exceptions for group lab reports, and you will be clearly notified when that occurs. If you are given the task of completing a group activity, you may turn in one for the group however you may not each receive the same grade.

**Late Work**: Late work will be taken with an excused absence. Each day the assignment is late 10% will be taken off the grade. If you miss a lab an alternative assignment may be given to you or you may be required to come in after school and complete the lab.

**Academic Fraud:**

Students are expected to write their own lab reports (unless otherwise noted), research and other writing assignments. **Absolutely no plagiarism of any kind will be tolerated.** While I understand that students will have similar lab data when in the same groups, it is expected that your data analysis, conclusions and research will be written in your own words. Homework assignments will be handwritten to avoid cheating. Expect me to be vigilant in checking your references and online sources!

**APES Course Outline 2016-2017**

**(We will follow this as best as we can, but I do know events come up and life happens. However, don’t expect many adjustments to this pacing guide.)**

### [Unit 1: The Living World: Ecosystems](https://apstudents.collegeboard.org/courses/ap-environmental-science#apricot_aAQbKEf00U)

You’ll begin to explore a view of planet Earth as one system made up of regional ecosystems composed of interdependent environmental features, processes, and relationships between species.

Topics may include:

* Introduction to ecosystems
* Terrestrial and aquatic biomes
* Primary productivity
* Carbon, nitrogen, phosphorus, and water cycles
* Trophic levels
* The flow of energy in an ecosystem and the 10% rule
* Food chains and food webs

### [Unit 2: The Living World: Biodiversity](https://apstudents.collegeboard.org/courses/ap-environmental-science#apricot_FFOd_6GtB5)

You’ll learn about the importance of biodiversity within ecosystems and the impact of outside factors on the evolution of organisms.

Topics may include:

* Introduction to biodiversity
* Ecosystem services
* Island biogeography
* Ecological tolerance
* Natural disruptions to ecosystems
* Ecological succession

### [Unit 3: Populations](https://apstudents.collegeboard.org/courses/ap-environmental-science#apricot_GdW0w0iuyt)

You’ll examine how populations within ecosystems change over time, and the factors that affect population growth.

Topics may include:

* Generalist and specialist species
* Survivorship curves
* Population growth and resource availability
* Age structure diagrams
* Human population dynamics

### [Unit 4: Earth Systems and Resources](https://apstudents.collegeboard.org/courses/ap-environmental-science#apricot_erxDx1cIJZ)

You’ll study the natural components that make up the environment, from geologic features to the atmosphere and climate.

Topics may include:

* Tectonic plates
* Soil formation and erosion
* Earth's atmosphere
* Global wind patterns
* Earth's geography and climate
* El Niño and La Niña

### [Unit 5: Land and Water Use](https://apstudents.collegeboard.org/courses/ap-environmental-science#apricot_k9gFce1lJv)

You’ll examine how humans use and consume natural resources, and the ways in which we disrupt ecosystems, both positively and negatively.

Topics may include:

* The tragedy of the commons
* The Green Revolution
* Types and effects of irrigation
* Pest-control methods
* Meat production methods and overfishing
* The impacts of mining
* Urbanization and ecological footprints
* Introduction to sustainable practices including crop rotation and aquaculture

### [Unit 6: Energy Resources and Consumption](https://apstudents.collegeboard.org/courses/ap-environmental-science#apricot_hqiePQHaXv)

You’ll learn about renewable and nonrenewable sources of energy, where they’re used, and their impact on the environment.

Topics may include:

* Energy sources and fuel types, including fossil fuels, ethanol, and nuclear power
* Global energy consumption and distribution of natural resources
* Natural sources of energy, including solar power, wind, geothermal, and hydroelectric power
* Energy conservation methods

### [Unit 7: Atmospheric Pollution](https://apstudents.collegeboard.org/courses/ap-environmental-science" \l "apricot_yKdA8OldWA)

You’ll learn more about air pollution, including how human actions can cause it, and you’ll analyze legislation intended to regulate emissions and improve air quality.

Topics may include:

* Introduction to air pollution
* Photochemical smog
* Indoor air pollution
* Methods to reduce air pollutants
* Acid rain
* Noise pollution

### [Unit 8: Aquatic and Terrestrial Pollution](https://apstudents.collegeboard.org/courses/ap-environmental-science#apricot_LhyVKyQOAa)

You’ll examine the impact of pollution on ecosystems and learn how to determine its source.

Topics may include:

* Sources of pollution
* Human impact on ecosystems
* Thermal pollution
* Solid waste disposal and waste reduction methods
* Pollution and human health
* Pathogens and infectious diseases

### [Unit 9: Global Change](https://apstudents.collegeboard.org/courses/ap-environmental-science#apricot_IesvT_bX0q)

You’ll come to understand the global impact of local and regional human activities and evaluate and propose solutions.

Topics may include:

* Ozone depletion
* Global climate change
* Ocean warming and acidification
* Invasive species
* Human impacts on diversity

Practice Exam & Review the week of April 24th – April 28tth 2020

**AP Exam:**  **Date: May 11TH, 2020 @ 12PM**

**Unit 10: Post exam projects**

Experiments of student choice or extra credit book reports.

**Some words of advice to be successful in my class: READ your assignments, WRITE your essays well, LISTEN, and take notes in class, PARTICIPATE in all lab experiments and field work. The pace will be fast and furious in order to complete the course by the May test date. Best of luck to all of you!**

**LAB RULES & PROCEDURES**

Labs include working with equipment, chemicals and/or heating devices; as a result, it is imperative that you follow all safety rules at all times. Anyone not adhering to the rules will not complete the lab & will be given an alternative written or book assignment. If you have missing assignments prior to conducting a lab, you may not be able to participate in the lab.

**LAB RULES:**

1. Always wear safety glasses and aprons when working with chemicals or heat.
2. Do not smell anything unless told to do so. If you are asked to smell something, hold the container 6 inches from your nose and wave your hand over the opening of the container toward your nose.
3. If you spill a chemical on your skin, tell someone immediately to get the teacher, and flush the area with water for 15 minutes. If an irritation develops, contact a physician. Make sure chemicals are disposed of properly. If the instructions do not clarify how to dispose of the chemicals, ask the teacher before pouring anything down the drain.
4. No eating or drinking in the lab (expect for the ice cream lab)
5. No flames allowed without permission and without an adult in the room.
6. No horseplay at any time.
7. Long hair must be put up in a ponytail during most labs.
8. Open-toed shoes must not be worn during many of the labs.
9. If something is broken, notify me immediately before cleaning it up.
10. Do not touch any lab equipment or material without permission. We are not the only ones who use this lab.
11. Clean up your work area when the lab is completed & put all materials where you are instructed.
12. Only work with the people in your group. Stay at your station.

**LAB CONSEQUENCES: If it is your first offense & it is a minor offense, you will be pulled from the lab & will either copy the lab sheet (multiple times) or complete a book assignment. For more severe or multiple minor offenses, you may lose the privilege to conduct any labs the remainder of the year. In such cases, your lab grade will come from written assignments.**

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**Today’s Homework**

Please take this course description home for you and your parents to read over and understand.

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Lab fee is $10.

There will be many photos and videos taken in this class. Signing of this document serves as a release form for photos or videos taken of your child during class activities or competitions that may be posted on my classroom website that is hosted by the county server. If you wish to opt out of this release, please indicate below.

Please check the appropriate box.

Photos and/or videos may be published.

Photos and/or videos may not be published.

Student’s Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (print please)

Please share with me the way you prefer to be contacted. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Please return only this page of the syllabus with the lab fee of $10.00