

WINTHROP HIGH SCHOOL

APES Syllabus

Ms. Baker Rm 309

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Course Overview

The topics covered in the College Board AP Environmental Science class will relate directly to you and to the quality of your life and future. We will learn about past events, case studies of environmental disasters, new innovations in technology and solutions to some of the most difficult problems. Each week will consist of current events, debates, math skills practice, and open response writing. Homework will consist of chapter readings with online quizzes or finishing classwork. We will strengthen our knowledge of scientific process with inquiry-based labs and occasional formal lab reports to practice science writing. Perhaps more so than any other science course, environmental science is interdisciplinary; it includes topics and concepts from biology, chemistry, physics, and earth sciences, as well as social sciences (economics, politics, and sociology), and humanities (literature, art, and history). The goal is to provide you 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 risk factors of these problems, and to examine solutions for resolving or preventing them. This course adheres to the objectives instituted by the College Board for all AP Environmental Science. This is a laboratory course in which you are expected to follow scientific methodologies, collect data, and make and later evaluate informed hypotheses.

The objectives of this course are that each student shall:

- Demonstrate skills using various types of instrumentation and scientific methodologies
- Learn how to read and critique scientific research articles in the field of Environmental Science
- Practice using data collected to solve scientific problems
- Apply knowledge and critical thinking to current social concerns

NOTE: We will periodically debate issues in class. While it is not necessary that everyone agree – and in fact, class discussions are almost always better when there is disagreement – it is critical that everyone is able to respect each other’s positions (as long as they are appropriate). Learning to have such respectful discussions is a very important part of becoming a mature adult and scientist.

Earning College/University Credit

- ❖ **AP Exam:** Students are required to take the AP Exam on Monday May 6, 2019. This test is the driving force for the curriculum taught throughout the year.
- ❖ **Scores:** The AP grades range from 1 to 5, with 5 being the highest. Colleges typically accept a 4 or a 5 in lieu of an introductory level class in the subject and will be reported in July 2019.

Materials

This course will utilize the following texts:

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- Withgott, Jay, and Laposata, Matthew. *ENVIRONMENT: the science behind the stories*. 6th ed. Pearson. New York, NY. 2018.*
 - ISBN-10: 0-13-458056-7
 - ISBN-13: 978-0-13-458056-2
- Morgan, Myra. *Pearson Education Test Prep Series for AP Environmental Science*. Pearson. New York, NY. 2018.**
 - ISBN-10: 0-13-465826-4
 - ISBN-13: 978-0-13-465826-1

* This text will be provided via Mastering Environmental – an online platform

** Students are required to purchase this workbook on their own

Curriculum Content Map

| Month | Ch.'s | Unit | Topics | Selected Labs |
|----------|-------------------|--------|--|---|
| Sept | 1,2 3, 4 | 1 2 | <ul style="list-style-type: none"> ● Environmental Problems and Causes ● History of Resource Use and Conservation ● Critical Thinking/Scientific Method and Models ● Matter and Flow of Energy | Parts per Million Net Primary Productivity |
| Oct | 6.1-6.2 17, 18 | 3 | <ul style="list-style-type: none"> ● Air ● Air Pollution, Ozone loss ● Climate Change | Albedo Shoenbein Ozone Acid Rain |
| Nov | 5,8 6.3-6.8 | 4 | <ul style="list-style-type: none"> ● Evolution and Biodiversity ● Community Ecology | Biodiversity Leaf Litter Inter, Intraspec. Competition, Brine Shrimp Abiotic Factors (Unit 7) |
| Nov | 22, 24 | 5 | <ul style="list-style-type: none"> ● Sustaining Wild Species ● Terrestrial & Aquatic Diversity | Tragedy of Commons Fishing |
| Dec, Jan | 9,10 | 6 | <ul style="list-style-type: none"> ● Population Dynamics | Power of Pyramids, Duckweed, Global Pop Trends |
| Jan, Feb | 11,20 | 7 | <ul style="list-style-type: none"> ● Toxicology ● Human Health | Toxic 'Tea', Brine Shimp Abiotic Factors, |

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| | | | <ul style="list-style-type: none"> ● Pesticides ● Pest Control | Pesticides, Exp design |
| Feb | 10,13 15.1- 15.4 | 8 | <ul style="list-style-type: none"> ● Geology ● Soil | Soils Lab, Cookie Mining |
| Feb, March | 23,25 | 9 | <ul style="list-style-type: none"> ● Food Resources ● Urban Land Use | |
| March | 7,14, 19 | 10 | <ul style="list-style-type: none"> ● Aquatic Ecology ● Water Resources ● Water Pollution | Chemical water testing, Effect of Salinization Spec Heat |
| April | 15.5- 15.9, 16, 21 | 11 | <ul style="list-style-type: none"> ● Energy!, Efficiency & Renewables ● Solid Waste ● Review (time permitting) | Land Fill Lab |
| May 6 | | | !!!!GOOD LUCK, DO YOUR BEST on the AP EXAM!!! | |
| May, June | | 12 | Independent Research & Community Projects: <i>Plastic Pollution,</i> <i>saltmarsh study, school waste,</i> <i>energy, bioengineering,</i> <i>stormwater runoff, etc</i> | |

| APES Exam Topics | Units |
|----------------------------|--|
| Earth and Resources 10-15% | <input type="checkbox"/> Geologic time scales <input type="checkbox"/> Plate tectonics <input type="checkbox"/> Earthquakes <input type="checkbox"/> Volcanism <input type="checkbox"/> Seasons <input type="checkbox"/> The Atmosphere <input type="checkbox"/> Global Water Resources <input type="checkbox"/> Soil and Soil Dynamics |
| The Living World 10-15% | <input type="checkbox"/> Ecosystem Structure <input type="checkbox"/> Energy Flow <input type="checkbox"/> Ecosystem Diversity |

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|---|---|
| | <input type="checkbox"/> Natural Ecosystem Change <input type="checkbox"/> Natural Biogeochemical Cycles |
| Population 10-15% | <input type="checkbox"/> Population Biology <input type="checkbox"/> Human Population dynamics <input type="checkbox"/> Population size <input type="checkbox"/> Impacts of population growth |
| Land and Water Use 10-15% | <input type="checkbox"/> Agriculture <input type="checkbox"/> Forestry <input type="checkbox"/> Rangelands <input type="checkbox"/> Urban land development <input type="checkbox"/> Transportation <input type="checkbox"/> Public and Federal lands <input type="checkbox"/> Land Conservation <input type="checkbox"/> Mining <input type="checkbox"/> Fishing <input type="checkbox"/> Global Economics |
| Energy Resources and Consumption 10-15% | <input type="checkbox"/> Energy Concepts <input type="checkbox"/> Fossil Fuel Resources <input type="checkbox"/> Nuclear Energy <input type="checkbox"/> Hydroelectric Energy <input type="checkbox"/> Energy Conservation <input type="checkbox"/> Renewable Energy |
| Pollution 25-30% | <input type="checkbox"/> Air pollution <input type="checkbox"/> Noise pollution <input type="checkbox"/> Water pollution <input type="checkbox"/> Impacts on human health <input type="checkbox"/> Economic impacts |
| Global Change 10-15% | <input type="checkbox"/> Stratospheric Ozone <input type="checkbox"/> Warming Temperatures <input type="checkbox"/> Sea-level Rise <input type="checkbox"/> Loss of Biodiversity |

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AP Environmental Science
2018-2019

Please return this paper with signatures completed!!!*

Syllabus Acknowledgement

I acknowledge that I have read and understand the class syllabus for APES. I understand that if I have any questions or concerns regarding the course grade, content, or policies that I should contact Ms. Baker immediately.

Student Printed Name

Student Signed Name

Parent Printed Name

Parent/Guardian Signed Name

Parent/Guardian Email Address

Best time/way to Contact Parent/Guardian (optional):
