

**Advanced Placement Environmental Science (APES) Course Outline**  
**Monarch High School, 2015/16, Mr. Nardelli**  
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### **Course Overview**

The AP Environmental Science course is designed to be the equivalent of a one-semester, introductory college course in environmental science. It involves biology, chemistry, physics, geology, ecology, economics, political science and mathematics. The course has both theoretical and practical components, as well as a laboratory component. The AP Environmental Science course adheres to the objectives set forth in the *Course Description for AP Environmental Science* (see College Board AP web site), which are 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 solutions for resolving and preventing them.

All students in the course should have successfully completed a minimum of two science laboratory courses. They must maintain an organized laboratory data notebook, conduct laboratory activities while adhering to all laboratory safety rules, and submit laboratory reports. The curriculum is delivered through the use of lectures, research, reading of current events, discussions, and laboratory activities. The students are assigned readings from the textbook, as well as case studies and articles on topics related to current environmental issues. Student knowledge is evaluated through the use of chapter tests and quizzes, as well as written essays and free response questions (FRQs). There is a required mid-term exam, final exam, and the AP exam. Please see the College Board web site for further information as well as tips for doing well on the exam (<https://apstudent.collegeboard.org/apcourse/ap-environmental-science>).

### **Class Profile**

The students range in grade level from tenth to twelfth. The course meets for one school year, five days per week in 50-minute periods. Laboratory activities and/or field experiences are conducted in general on a bi-weekly basis. Scheduling of these activities may vary depending on class sizes and scheduling conflicts within the school system. With respect to mathematics, students should have completed or can be enrolled in Algebra II. Students should be **motivated learners** and should be capable of reading a college level textbook.

### **Textbook/ Materials**

G. Tyler Miller, Jr. and Scott E. Spoolman *Living in the Environment 16<sup>th</sup> Edition* (Belmont, Calif.: Brooks/Cole, 2009, 2007). You may find the electronic version of the text on the Monarch High School web site (<http://monarchknights.com/onlinebooks.html>).

Three-ringed binder  
Composition Laboratory notebook  
Blue or black ink pens

### **Abbreviated Course Outline**

- I. Humans and Sustainability: An Overview
  - Chapter 1 - Environmental Problems, Their Causes, and Sustainability
  - Supplement Section 5 - Environmental History
- II. Matter, Energy and Ecosystems
  - Chapter 2 - Science, Matter, Energy, and Systems
  - Chapter 3 - Ecosystems: What Are They and How Do They Work?
- III. Biodiversity: Evolution and Populations
  - Chapter 4 – Biodiversity and Evolution

- Chapter 5 - Biodiversity, Species Interactions, and Population Control
- Chapter 7 - Climate and Terrestrial Biodiversity
- Chapter 8 - Aquatic Biodiversity
- IV. Sustaining Biodiversity and Natural Resources (Physical and Biological)
  - Chapter 9 - Sustaining Biodiversity: The Species Approach (integrate content from Chapters 24 and 25)
  - Chapter 10 - Sustaining Terrestrial Biodiversity: The Ecosystem Approach
  - Chapter 11 - Sustaining Aquatic Biodiversity
  - Chapter 13 - Water Resources
  - Chapter 20 – Water Pollution
- V. The Human Population and Resource Management
  - Chapter 6 - The Human Population and Its Impact
  - Chapter 12 - Food, Soil, and Pest Management
  - Chapter 14 - Geology and Nonrenewable Minerals
  - Chapter 15 - Nonrenewable Energy
  - Chapter 16 - Energy Efficiency and Renewable Energy
- VI. Environmental Quality
  - Chapter 17 – Environmental Hazards and Human Health
  - Chapter 18 – Air Pollution
  - Chapter 19 - Climate Change and Ozone Depletion
  - Chapter 21 - Solid and Hazardous Waste

Chapters 22, 23, 24, and 25 are integrated throughout the curriculum. At the end of the course, a discussion will be used as an evaluation tool to determine the students' ability to discuss and support their views on environmental issues.

**AP Environmental Science is a multidisciplinary, *applied science* course that includes:**

- ✓ Biology
- ✓ Ecology
- ✓ Chemistry
- ✓ Geology
- ✓ Physics
- ✓ History
- ✓ Math (no calculators)
- ✓ Economics
- ✓ Political Science

**Major Themes:**

- ✓ Science is a process
- ✓ Energy conversions underlie all ecological processes
- ✓ The Earth itself is one interconnected system
- ✓ Humans alter natural systems
- ✓ Environmental problems have a cultural and social context
- ✓ Human survival depends on sustainability

**Students ready for success in AP Environmental Science are:**

- ✓ Proficient in Algebra, Biology, Chemistry
- ✓ Highly motivated
- ✓ Skilled readers
- ✓ Critical thinkers
- ✓ Problem solvers
- ✓ Interested in learning
- ✓ Willing to work [a lot]

## Grading Policy

A test or quiz will follow each chapter and will consist of objective multiple choice questions and free response questions. Questions will be taken from the book test banks, from previous AP exams and from the instructor's notes and handouts. You must read and study the book chapters to do well on tests and quizzes.

Grades for this class will be based primarily on tests and quizzes (ca. 60%); homework and class work (ca. 20%) and laboratory reports (ca. 20%). Note that these are general percentages may vary somewhat in any given marking period.

	<u>Grading Scale</u>	
• Unit Tests	90-100	A
• Essay Exams (FRQs) → 2 grades per FRQ (graded using AP or AP style rubrics)	87-89	B+
• Pop quizzes → 1-2 grades; may be given at any time	80-86	B
• Projects / assignments → 4 – 20 grades (1 – 2 per 9 weeks)	77-79	C+
• Labs → 2 – 4 grades	70-76	C
• All tests can be considered cumulative	67-69	D+
	60-66	D
	59-0	F

## Homework

- Standing assignment → review (and re-write if necessary) class notes and handouts nightly for 15 – 30 minutes
- Read and outline (in detail) each assigned chapter
- Complete projects and/or lab reports (as assigned)
- Study for exams

## Participation

It is expected that all students will actively participate throughout all aspects of the course. Every student is given 50 points at the start of the quarter for a participation grade. This equals the same value of a quiz grade. Students can keep the full value of the grade by participating in class discussion, being on time, taking notes and following classroom rules.

Points will be deducted for the following reasons:

1. Excessive tardy
2. Not taking notes
3. Side chatting among fellow students during class discussion and lecture
4. Using cell phones for unrelated class activities or having headphones on during class
5. Standing out of the seat or walking around class when the class is in session
6. Not following directions or listening to instructions

## Make-up Work

- Missed exams need to be made up the day the student returns to school, make-ups are given after school. If the student is out for an extended time, an alternate exam may be given.
- Late work – assignments turned in late will lose 10 points per day for every day the assignment is late due to unexcused absences or missed deadlines.
- There are no make-ups for pop quizzes.
- Labs cannot be made up, but no credit will be given.

**For your academic success and that of your classmates, please observe the following general guidelines in Mr. Nardelli's classes:**

- Arrive to class promptly and prepared to learn. Do not show up late to class without a pass.
- Show respect to your classmates and your teacher [courtesy is contagious]
- Make responsible choices, i.e, take ownership of your learning, your actions and your words

- **Cell phones** are to be placed on top of your desk, in front of you and faced down. There will be no cell phone usage during class instruction. Do not charge cell phones in the power outlets. Cell phones will be taken away for misuse, and if used during an exam then the exam will be invalidated.
- Students are expected to notify teacher ASAP of attendance issues and grade discrepancies on Pinnacle (Please do not wait until the end of a quarter to dispute records). Students are expected to communicate their individual grade concerns via email or speak to the teacher before or after school. Students who are absent should meet with and/or email the teacher regarding make up work and lecture notes once they return to school (See above regarding make-up work).
- All powerpoints will be posted on my website. It is the student's responsibility to stay on track with lecture notes, exams, quizzes and class assignments.
- Regarding the above, many students who have historically earned poor grades (D's or F's) in this class have either low attendance records or spend their class time texting.
- This is a college level course; therefore it is my expectation of you that you will adhere to a high standard of behavior for success.

You or your parents may contact me with questions regarding this class at my email address:

[Adam.nardelli@browardschools.com](mailto:Adam.nardelli@browardschools.com)

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I have read the syllabus and understand the expectations required to be successful and prepared in this course.

Student name: \_\_\_\_\_ Period: \_\_\_\_\_

Student signature: \_\_\_\_\_ Date: \_\_\_\_\_

Parent/ Guardian name: \_\_\_\_\_

Parent/ Guardian signature: \_\_\_\_\_ Date: \_\_\_\_\_

**TURN OVER AND COMPLETE LAB CONTRACT**