

Welcome to AP Environmental Science

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The course

This is a college level course in Environmental Science, different from our other courses at HPA in several ways: first, we are accountable to an AP exam usually given in May. Any student taking any AP course at HPA is required to take some sort of final exam at the end of the course. This is supposed to be the AP exam, but if for some reason you do not take the AP exam, we will create a final for you. Second, this course moves at a pace designed to match a similar course at any college or university. One reason students take AP courses is to demonstrate to colleges that they can complete college level work. For this reason, we will treat you as college students when you are in this class. There will be labs, readings, and you will be expected to take notes at all times. This is how you will demonstrate to the colleges that you are ready, but I hope to make all of this fun at the same time. I have taught at the university level, and know what it takes to help you succeed there. Worry not, I'm on your side.

How is this course different from environmental science class? More labs, college level readings, and a faster pace. We'll be working with the env sci class on field projects though, which should be familiar to you.

Our goal in this course should be more than just a perfect score on the AP exam, but should be a chance to work in a great place doing exciting things you are passionate about. I'd like you to share with me your passion for the environment, and we can learn together.

Environmental Science

Environmental Science is the study of- you guessed it: the environment. We'll follow a course outline much like that in the AP review texts, in particular the Barron's AP prep guide from 2007-2008 (see list below). We'll be using several resources: the review book, a traditional textbook (Wright, see below), as well as online resources such as the Encyclopedia of Earth.

If you ask any instructor of environmental science in high school what their biggest issue is, it would probably be shabby textbooks: poor science, many errors, too political. I've chosen a college level text, but it's not perfect. I think it offers us the best prep for your exam in May, and should be really interesting as well.

I've chosen several resources as some students like online stuff, others prefer the traditional text. I'll listen carefully to what works best for you.

We'll be doing a series of labs (see syllabus below), some of which can only be done on the big island of Hawai'i. We are truly blessed in our location, and you will find yourself far better prepared for any college course in environmental studies after working here.

About the instructor

I've been teaching physics for 27 years. I got my BA from UC Berkeley in Physics long ago, a Masters in Educational Philosophy (why we teach), and a PhD in Physiology and Neuroscience. I really believe that we never stop learning, and I'll do my best to cultivate and honor this in you. I love teaching, and it is a new experience for me every year.

Grades, exams, labs and stuff

We will have frequent quizzes, usually at the beginning of each class period. Our labs will be specific to the material covered, and will follow the guidelines of the AP exam, so don't worry, we'll keep on track in preparing you for the exam.

Our exams will be timed versions of parts of the AP exam, which is both multiple choice and free-response. You'll go into the exam in May 2009 with great confidence.

We are compelled to make sure that the progress you make in the course mirrors your success on the AP exam, so if you are doing well in the class, you will surely do well on the exam.

Percentages for each (exams, labs, quizzes) will roughly fall into a 50/30/20 percentage, but we can shift this as we go along. My main goal with the grading is to motivate you and evaluate your progress.

If there is one drawback to the AP nature of the course, it's that we have to be on a schedule to cover all of the material in the allotted time. We'll move briskly but not so fast that you find yourself underwater.

If you DO find yourself underwater, come and see me right away. One saying about this level of science is that it relentlessly tramples stragglers. The sooner you seek out help, the better off you will be. It's also excellent practice for college, where finding the professor can be a challenge. I've taught in the university system, and I know how to prepare you to not just survive, but to thrive.

Weblogs, email, and X period

I communicate a great deal of information on the weblogs at <http://physics.hpa.edu/weblog/bwiecking>

It's a good idea to check this weblog every night at about 9 PM, which is the latest I would make any changes to our class plans (exams, hw due, etc.). Check your HPA email every day as well, I keep a mailing list of the class, and send out updates and references you will need for classes.

X period is a new animal to all of us, but know that AP will be using the X period a great deal. Here's why: The College Board specifies that we should be meeting a minimum of 245 minutes per week. On our best weeks, we meet about 200 minutes. Where to get those missing minutes? X period. I'll fill you in more on this as I know more myself.

Online Grades

Your grades are available on my HPA web page at <http://physics.hpa.edu/~bwiecking/grades>

You can suggest that your parents check this out from time to time, to see how smart you are.

Textbooks

We'll be using three main texts:

Barron's AP Environmental Science 2007-2008, ISBN 978-0764136436

Environmental Science, tenth edition, Richard T. Wright, ISBN 0-13-230265-9, Prentice Hall 2008.
(this text has a great online support section as well)

Encyclopedia of Earth (eearth.org):

http://www.eearth.org/article/AP_Environmental_Science_%28course%29

You may also choose to purchase the Princeton Review "Cracking the AP" text 2008 edition (ISBN 978-0-375-42844-9)

All of the printed texts are available on Amazon, I'll be working with the bookstore to get in copies of these as well.

Study Skills

If there is one common thread in the comments I hear from returning college freshmen it is this: Take better notes, read the textbook before class, and ask questions before you get lost. To help with your notes, I'll be providing a pdf file you can use to print out a note taking paper common in universities. The trick is to take notes in the larger section, then review them in the smaller section. More on this in class.

Lab hardware

We'll be using the Vernier set of probes and software in class, which will enable you to do labs that were impossible in even most colleges just a few years ago. These use probes and analysis programs that will help you no matter where you attend college, as well as being a lot of fun to use. We will begin our studies of energy with just these devices. I'll pass out a CD for you with the software on it, should you want to do your own analysis at home for lab work.

Lab Format

Our labs follow the University of California system format, not because I went there, but because it has become the college standard:

Title

Purpose

Background

Materials

Procedure

Data

Observations

Analysis

Conclusions

Here's a summary of each:

Title-what the lab is about, should be short and to the point

Purpose-what you hope to accomplish. Should be later addressed in conclusions

Background-any information that will make your lab easier to understand for the reader, a sense of context.

Materials-non-obvious things you will need to do the lab (you need not list oxygen, table, floor, etc.)

Procedure-detailed steps to follow to duplicate your lab. Think of it this way: could you follow these instructions and complete the lab if you were absent that day?

Data-anything you gather that is not in words: graphs, tables, results

Observations-any results not in numeric form, e.g. "My partner ran fastest when he was on fire"

Analysis-look at your data: does it make sense? Is your experiment a failure in what you were trying to find, but a success in finding something else?

Conclusions-address the purpose, and list ways you could improve the lab for the next person.

Due dates/late work

All work is due on the date specified. No credit is given for late work, as in college. Remember that when you walk in the AP classroom, you are in a college environment. In University problem sets will be due at a certain time without variance. If you set your lab partner on fire, this is another matter, of course.

Conclusion

This will be fun, let me know how we can make it better.

Dr. Bill Wiecking

