

Student Guide AP Environmental Science

AP Environmental Science

Text: *Environment 4/E Raven & Berg*
Instructor: Michael Lopatka

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Environmental Science Lecture Schedule

<u>Lecture</u>	<u>Topic</u>	<u>Environment 3/e, Readings</u>
1	Introduction to Environmental Science	Chapter 1
2	Addressing Environmental Problems	Chapter 2
3	Addressing Environmental Problems (cont.)	
4	Addressing Environmental Problems (concl.)	Chapter 3
5	Ecosystems and Energy, Part I	Chapter 4
6	Ecosystems and Energy, Part II	
7	Community Ecology	Chapter 5
8	Ecosystems and Cycles, Part I	Chapter 6
9	Ecosystems and Cycles, Part II	
10	Identification and Distribution of Global Ecosystems	Chapter 7
11	EXAM #1. ALL Material Chapters 1-7.	
12	Population Ecology, Part I	Chapter 8
13	Population Ecology, Part II	
14	Issues of Overpopulation, Part I	Chapter 9
15	Issues of Overpopulation, Part II	
16	Fossil Fuels	Chapter 10
17	Nuclear Energy	Chapter 11
18	Renewable Energy and Conservation, Part I	Chapter 12
19	Renewable Energy and Conservation, Part II	
20	Water: A Fragile Resource, Part I	Chapter 13
21	Water: A Fragile Resource, Part II	
22	EXAM #2. ALL Material Chapters 8-13.	
23	Soils, Part I	Chapter 14
24	Soils, Part II	
25	Minerals: A Non-renewable Resource	Chapter 15
26	Biodiversity and Wildlife Conservation, Part I	Chapter 16
27	Biodiversity and Wildlife Conservation, Part II	
28	Resources and Conservation, Part I	Chapter 17
29	Resources and Conservation, Part II	
30	Agriculture and Issues	Chapter 18
31	Air Pollution, Part I	Chapter 19
32	Air Pollution, Part II	
33	EXAM #3. ALL Material Chapters 14-19.	
34	Global Atmospheric Changes, Part I	Chapter 20
35	Global Atmospheric Changes, Part II	
36	Water and Soil Pollution, Part I	Chapter 21
37	Water and Soil Pollution, Part II	
38	Pesticides	Chapter 22
39	Solid Waste	Chapter 23
40	Hazardous Waste	Chapter 23
41	Applications to Real World Issues, Part I	Chapter 24
42	Application to Real World Issues, Part II	
	COMPREHENSIVE FINAL DURING EXAM WEEK Chapters 1-24	

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Study Hints

Read It!

Read the relevant chapter before coming to class. Look up unfamiliar terminology and highlight or write out any questions. If these questions are not clarified by the lecture, you could ask for clarification during lecture or in office hours.

Read over your notes soon after lecture, perhaps over lunch (if it fits into your schedule) or later the same day.

Highlight any questions or new terminology. Attempt to clarify these by using your text. Record any references from the text directly in your notes to help establish a link between your two sources of information.

Write It!

Now you need to invest some additional time in your lecture notes and the text. Just reading through the material probably won't be enough for most of you (it never was for me). You need to find some way to work with the information so that you can learn it.

You can outline the chapters and your notes. This may help you to identify the major topics and how the pieces of information relate to each other.

You can make study cards for yourself. This will help you to quiz yourself and help you to find out what information you know and what material you need to study more carefully. Remember, you need to study the information that you are most unsure of, not the material that you already know.

Do It!

Just memorizing all of the material in the text and in your lecture notes will not be enough to do well on the exams. The exams will ask you to apply the information in new ways or from different perspectives. How can you prepare for this?

Whatever method you choose, be sure to invest legitimate time studying. This would *not* include: "Visiting" with a few friends from class; "Looking" over the book or your notes while watching TV; "Thinking" about studying; Doodling, napping, snacking, etc.

STUDY GROUPS

You can work in small groups to quiz each other and help each other to understand the course material. Be sure that this does not turn into a social event. Work on the difficult concepts and help each other out.

THE TEXTBOOK

- 1) Respond to the Learning Objectives at the beginning of the chapter as a test of what you know. Give yourself 15 to 20 minutes in a quiet setting to work through all of the questions. Verify your answers by checking through the relevant chapter in the text.
- 2) Pay attention to which questions you missed and *why*. Do you need to go back and review some material? Do you need to read the questions more carefully? Do you need further explanation from a classmate, a tutor or the instructor?
- 3) Answer the Thinking about the Environment questions at the end of the chapter for practice in applying what you have learned.

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THE LECTURE

- 1) *After* studying your lecture notes, try to write out the answers to the questions on the study sheet that your instructor has provided.
- 2) Check your answers by looking through your notes.
- 3) Again, pay attention to which questions you missed and *why*. Do you need to go back and review some material? Do you need to read the questions more carefully? Do you need further explanation from a classmate, a tutor, or the instructor?

By following these suggestions, you will already have been "tested" on the material before you take the exam. Then when you do take the lecture exam, you should be well prepared to demonstrate your knowledge and understanding of the class material.

How to Take An Exam

The mechanics of taking an exam:

Look through the entire exam first to see how many and what types (multiple choice, matching, T/F, fill in, essay, etc.) of questions there are. That way there will be no "surprises" during the exam, and you can better budget your time.

Always check your answers and only change an answer if you are sure that your original answer is wrong. The tendency is for students to become confused and "over-think" a question, which often results in changing a correct response to an incorrect response.

Strategies for taking an exam:

Answer questions that you are sure about first and come back to others later on. You can mark those that you are unsure of with a question mark to draw your attention when you go back through the exam. If you only know part of an answer, then mark that on the exam and come back to straighten out the details later. You can do this on a multiple choice exam by crossing out answers that you KNOW are incorrect and leaving the decision between the other possible answers until you are reviewing the exam.

TRUE/FALSE QUESTIONS:

For a T/F statement to be true the entire statement must be accurate as it is worded. If the statement is inclusive (*all, entire, total, 50%*) and a component has been deleted, then the entire statement is *false*. Here is a sample T/F question from Exam #1 (1999):

T F 96% of living material is composed of the following elements: carbon, oxygen and hydrogen.

This statement is false because one of the four dominant components (nitrogen) has been omitted, which means that the percentage can't be 96%.

If the statement is accurate as worded, even if additional components could have been included, then the statement is true. Here is a T/F question from Quiz #1 (1998):

T F Cellular respiration is a characteristic of plants.

This statement is true, although we could have included bacteria, animals, fungi, and protists in the statement as well. There is no direct or implied exclusion in the statement as worded, so it is accurate, in spite of being somewhat incomplete. Additionally, we frequently look at the process of photosynthesis in plants and then use animals to examine cellular respiration; however, all living organisms use cellular respiration as the means by which they release stored (potential) energy. Yes, plants are also capable of cellular respiration!

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MULTIPLE CHOICE QUESTIONS:

For multiple choice questions that include options for **All of the above** or **None of the above** or combinations of other choices, ignore the all or none or combination answer(s) while you evaluate the other possible choices. If you find an answer that is not applicable to the question, immediately cross out the **All of the above** choice. Similarly, you may immediately remove the **None of the above** choice if you find at least one answer which applies to the question being asked. Only select the All or None or combination options after carefully reviewing all of the other answers.

Do not look for a "pattern" in the sequence of letters for multiple choice answers. Few professors worry about the particular letter that is used to indicate a correct response.

Which of the following is *not* a property of water?

- A. The polar nature of the molecule allows for the formation of hydrogen bonds.
- B. Water freezes at 0°C.
- * C. Water has its maximum density at 0°C.
- D. Water converts to steam at 100°C.
- E. Water has high surface tension.

This question is essentially a series of T/F questions with the specification that only one of the answers is false. In order to accurately answer this question you must be familiar with the basic properties of water, in which case the correct answer is obvious.

Swamp-living plants will produce the following fossil fuel(s):

- * A. coal
- B. natural gas
- C. oil
- D. A and B
- E. B and C

This is a basic content-oriented question, with a twist. You are offered a variety of combinations within which to fit the correct answer. The bottom line is that you will need more than a passing familiarity with the subject in order to correctly answer the question.

Which of the following is an organic molecule?

- A. O₂ oxygen
- B. H₂O water
- C. NH₃ ammonia
- * D. CH₄ methane
- E. None of the above

This question forces you to evaluate each response individually. A through C are definitely not organic molecules (by definition), but since both oxygen and water are required for life, they may both be somewhat tempting answers. Answer D does contain carbon but may be unfamiliar to you and there is also the possibility of selecting option E (None of the above). If you are secure in your understanding of what an organic molecule is (and is not) this question appears simple; however, if you are not clear as to what characterizes an organic molecule then this becomes a confusing and frustrating question with more than one seemingly correct answer. If that is the case, you need to apply the strategies just suggested for coming up with your selection for the best answer.