

Important Summer Session 2009 Dates

	Session I	7-wk Sess	8-wk Sess	10-wk Sess	Session II
Last day to enroll/add online	June 27 (Sat) (11:59 pm)	June 27 (Sat) (11:59 pm)	June 27 (Sat) (11:59 pm)	July 4 (Sat) (11:59 pm)	Aug 1 (Sat) (11:59 pm)
Last day to drop online	June 28 (Sun) (11:59 pm)	June 28 (Sun) (11:59 pm)	June 28 (Sun) (11:59 pm)	July 5 (Sun) (11:59 pm)	Aug 2 (Sun) (11:59 pm)
Withdrawal Period at Summer Office (no refund)	June 29 – July 10 (8:00-4:00)	June 29 – July 17 (8:00-4:00)	June 29 – July 24 (8:00-4:00)	July 6 – July 31 (8:00-4:00)	August 3 – August 14 (8:00-4:00)
Note that during Summer Session there is no auditing of classes, no "Add by Petition" and no "Administrative Drop by Instructor". Failure to attend class does not constitute a "Drop". All deadlines are final.					

SYLLABUS

EART 006: Concepts in Environmentalism

Summer 2009

Instructor: Jennifer D. Small
 Office: Earth & Marine Science, Room A243
 Phone: 459-5778
 Email: jsmall@es.ucsc.edu
 Office hours: TBD

Class Days: Mon-Wed-Fri, 9:00 AM – 11:30 am

Class Location: N. Sci. Annex 102

Textbook: The required text is a reader available from the bookstore and the book *The Consumer's Guide to Effective Environmental Choices* by Michael Brower and Warren Leon.

Course Outline

Learn the scientific concepts required to be an informed environmentalist! Topics include urban smog; water resources and pollution; waste treatment; acid rain; global climate change; fossil-fuel, nuclear, and renewable energy; overpopulation; how an individual can minimize their environmental impact.

Course Schedule:

Week 1: (Lectures 1-3)

Topics: Scientific Quantities, Box Models, Energy, Radiation, Greenhouse Gases

HW: No Homework

Quiz 1: Friday, **June 26th**, all material covered in **lectures 1-3**.

Week 2: (Lectures 4-6)

Topics: Greenhouse Gases (con't), Past Climate, Carbon cycle, World Population

HW #1: Due Monday, **June 29th**, 5 pm.

Quiz 2: Friday, **July 3rd**, all material covered in **lectures 3-6**. (Yes, 3 as well)

Week 3: (Lectures 7-9)

Topics: Water Resources and Pollutants, Water and Wastewater Treatment, Energy (start)

HW #2: Due Monday, **July 6th**, 5 pm

Quiz 3: Friday, **July 10th**, all material covered in **lectures 6-9**. (Yes, 6 as well)

Week 4: (Lectures 10-12)

Topics: Energy Resources, Acid Rain, Photochemistry, Ozone, Air Quality (start)

HW #3: Due Monday, **July 13th**, 5 pm

Quiz 4: Friday, **July 17th**, all material covered in **lectures 9-12** (Yes, 9 as well).

Week 5: (Lectures 13-15)

Topics: Air Quality, ENSO, Consumer's Guide, Review for Final and Final Exam.

HW 4: Due Monday, **July 20th**, 5 pm

Final Exam: Friday, **July 24th**, all material covered in **lectures 1-14**

Evaluation:

The course will consist of 500 total points divided into three categories.

Homework sets:	200 pts. (40%)
Weekly Quizzes:	100 pts. (20%)
Final exam:	200 pts. (40%)

Adjustment of letter grade: One can receive an **upward** adjustment of letter grade for a number of reasons (e.g. very strong improvement during the quarter, notable participation during class, exceptional effort). In almost all cases such an adjustment will be one letter grade fraction (e.g. B to B+). Under no circumstances will a reduction in letter grade be given, and these adjustments are made after the normal grades are assigned and therefore affect no one else's letter grade.

Homework sets will be comprised primarily of quantitative problems. There will be 4 problem sets during the Course. Homework sets will be due at 5 PM on Mondays. Unless previous arrangements are made, homework sets turned in up to 24 hours late are worth 50%; homework sets will not be accepted after that.

Exams will be comprised both of short answer problems to test conceptual knowledge, and quantitative problems.

**** There will be no extra credit offered to any individuals. No exceptions. ****

I may give out extra credit work, but if I do, it will be available for *all* students in the class.

Grades:

Grading will not necessarily be “on a curve.” There is no expectation of what the average grade should be, nor what the grade distribution should look like. If everyone were to demonstrate outstanding understanding of all the material, then everyone deserves a grade of A (and I would be very happy to give each one of them)! I therefore encourage you to discuss the course material with each other to get the most out of the class.

I will **GUARANTEE** the following letter grades: if you achieve a 90% or above, you will get an A or better, **no matter how many people do so!**; 80% = B or better; 70% = C or better. The scale could slide downwards, e.g... an A is actually 86% or better, but what I am saying is that it won't slide upwards.

Course Tenets

(1) The textbook supports the lectures, **not** vice versa. Each of you pays good money to attend university, and my job is to make sure the lectures are worthwhile. I teach you what I believe is important, not what any given textbook believes is important, and therefore not all the material in the text is required material, and some required material will not be available in the text (but most likely will be supported by supplemental reading), so I strongly encourage you to come to class.

(2) University is about learning **skills**. Learning **facts** to accompany these skills is also necessary, but **not the most important part**. To learn facts, you can go to the library and read a book. It would be easier and a lot cheaper. The reason university is harder and more expensive is because learning skills is much more challenging. However, learning a new skill also **requires significant effort from the student, and this is your responsibility in this course** – to make the most of this opportunity by investing the time, energy, and most importantly, thought, necessary to master something new.

(3) **Why are calculations part of the course?** Simple arithmetic and algebra is a part of this course for a simple reason: this is a science course at the university level. Physical sciences are fundamentally **quantitative, not descriptive**. Therefore, fluency in the use and manipulation of numbers is fundamental to learning any physical science. In almost all cases, all you are really expected to do is add, subtract, multiply and divide. Occasionally you may have to take a square root. That's it, and everyone knows how to do this. Some fraction of you may be overcome by the desire to come to me and say “I can't solve this problem because the math is too hard (or I'm terrible at math, I hate math, etc.)” In 99% of these cases, the problem isn't the math, it's a lack of comprehension of the concepts, i.e. you don't understand the concepts well enough to figure out if you should multiply the two numbers or divide them or subtract them. Once you grasp the concepts, the math part (the multiplication, for example) turns out to be very simple. However, if you really will not enjoy this course because of this very modest expectation, then I would suggest finding another course.