

Chemistry 70: Land, Air, and Ocean Science
Fall Semester 2005
Course Expectations and Syllabus

Course Instructor: Professor Katie Purvis-Roberts Keck Science Center 231
kpurvis@jsd.claremont.edu Tel: x79782

Lectures: TTh 9:35-10:50 am, Keck 127

Laboratory: Th 1:15-4:15 pm, Keck 245

Office Hours: Monday 11 am-noon, Tuesday 1-3 pm, Friday 9-10 am

Required Texts and Supplies: *Chemistry in Context: Applying Chemistry to Society*, American Chemical Society, 5th edition, McGraw-Hill Higher Education, ISBN 0-07-310159-1.
 A permanently bound laboratory notebook. Black and white composition book will work fine.
 A calculator

Course Objectives: The course is designed to introduce fundamental ideas of chemistry and apply them to environmental concepts. We will discuss many topics of interest in the world today, such as global warming, the ozone hole, acid rain, water pollution, etc., and discuss both the science and political implications of such problems.

Last Day to Drop the Course: Thursday, October 20th

Grading: The breakdown is as follows:

2 Mid-term Exams	40%
Laboratory work	15%
Homework Assignments	10%
Introductory talk	5%
Mid-semester talk	10%
Final paper	10%
Final talk	<u>10%</u>
	100%

Group Projects: Throughout the semester group projects will be presented based on various topics in environmental chemistry which are of interest to students in the class. Groups will be expected to do a short introductory talk at the beginning of the semester, a longer midterm progress report, and a final presentation and

paper. More information on the assignment will be given as the semester progresses.

Exams: Exams (including the final) will consist of multiple choice, fill in the blank, calculations, short answer, and short essay questions and be based on course lectures, student presentations, and homework assignments. Scheduled exam dates are set in stone. An unexcused absence from an exam will result in a score of zero. Excused absences will be granted in cases of extreme illness or a death in the family. In each case, I require written documentation (from a doctor in cases of illness). In either event, there will be no make-up exams. People with excused absences will need to speak to me about the consequences of missing the exam.

Laboratory Work: The laboratory portion of the course is mandatory. The class will meet in KSC Room 245 from 1:15-4:15 pm on Thursday afternoons. Lab will begin in the 2nd week of the semester, and will run every other week for a total of 6 lab periods. Although lab work will be a collaborative effort among you and your group members, each student will receive a separate grade based on a lab report handed in one week after the experiment is performed. Any missed labs will result in a grade of zero on the lab report for that experiment.

Homework Assignments: Short problem sets will be assigned throughout the semester, and will be due in class on Tuesdays. Problem Sets must be submitted at the beginning of class on the date specified to be eligible to receive full credit. If turned in late, but before 5 pm of the day due, a 3 point penalty will be assessed before grading. Both the problem sets and their solutions will be posted on the Chem 70 WebCT site.

Grading Scheme: The following guidelines will be in effect:

90 & above = A- to A
80-89 = B- to B+
70-79 = C- to C+
60-69 = D- to D+
59 & below = F

I reserve the right to lower these guidelines to *your* advantage.

Chem 70 WebCT site: webct.claremont.edu

The Chem 70 WebCT site will have information such as problem assignments, problem answers, and special announcements. You need to log on and register on the WebCT site. Instructions will be given at the first lecture.

Week	Date	Activity	Assignments
1	August 30 Sept. 1	Introduction to the course “	
2	Sept. 6 8	The Air We Breath (ACS 1, SOP Air Pollution*) “	
3	Sept. 13 15	Intro Student Presentations 1 (10 min. each) [Groups 1-5] Discussion of presentations	
4	Sept. 20 22	Intro Student Presentations 2 (10 min. each) [Groups 6-10] Discussion of presentations	Problem Set #1 Due
5	Sept. 27 29	Energy (ACS 4, SOP energy*) “	
6	Oct. 4 6	The Water We Drink (ACS 5, SOP water*) “	Problem Set #2 Due
7	Oct. 11 13	Midterm exam #1 Nuclear Chemistry (ACS 7)	
8	Oct. 18 20	Fall Break Nuclear Chemistry continued....	
9	Oct. 25 27	Mid-semester presentations 1 (15 min. each) [Groups 1, 2, 4, 5] Discussion of presentations	
10	Nov. 1 3	Mid-semester presentations 2 (15 min. each) [Groups 3, 6, 7] Discussion of presentations	Problem Set #3 Due
11	Nov. 8 10	Mid-semester presentations 3 (15 min. each) [Groups 8, 9, 10] Discussion of presentations	First draft of papers due
12	Nov. 15 17	Final Group Presentations 1 (20 min. each) [Groups 1, 2, 4] Discussion of presentations [Group 5]	Problem Set #4 Due Comments on papers due
13	Nov. 22 24	Plastics and Polymers (ACS 9) Thanksgiving Break	
14	Nov. 29 Dec. 1	Final Group Presentations 2 (20 min. each) [Groups 3, 6, 7] Discussion of presentations	Final papers due
15	Dec. 6 8	Final Group Presentations 3 (20 min. each) [Groups 8-10] Discussion of presentations	
	Final Exam	Thursday December 15th, 9 am	

* Readings appear on WebCT site (webct.claremont.edu).

Laboratory Schedule

WEEK #	DATE	GROUP #	LAB
2	Sept. 8	1	Fishbanks/Nitrogen oxide prep
3	Sept. 15	2	Fishbanks/Nitrogen oxide prep
4	Sept. 22	1	Nitrogen oxide pollution
5	Sept. 29	2	Nitrogen oxide pollution
6	Oct. 6	1 & 2	Tour of Ontario/Soil Sampling (everyone)
7	Oct. 13		No Lab
8	Oct. 20	1	Lead in Soil Analysis
9	Oct. 27	2	Lead in Soil Analysis
10	Nov. 3	1	Water Chemistry
11	Nov. 10	2	Water Chemistry
12	Nov. 17	1	Classification and Identification of Common Plastics
13	Dec. 1	2	Classification and Identification of Common Plastics