📖 Syllabus

Syllabus Spring 2008

Tentative Syllabus
Chemistry 368
Environmental Chemistry

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Office hrs. 10-11 am MWF	9:30-noon TTh	or by appointment anytime

Text: Environmental Chemistry Third Edition by Colin Baird (Freeman, 2005).

The material in the course will be broken up into three section and includes the following material in your text:

- Introduction to Green Chemistry

- Chapter 1: Stratospheric Chemistry (3-21; 27-28.5; 33.5-39.5; 48-end)

- Chapter 2: Ground-Level Air Polution (66-106)

- Chapter 4: The Greenhouse Effect (166-181.5; 185.25-192.25; 201.5-206.75)

- Chapter 7: Pesticides (307-323; 327.75-334.25; 342.75-346.5; 351.5-end)

- Chapter 8: Nonpesticidic Toxic Compounds (358-373.1; 387.8-393.25; 405.25-end; **420-421**)

- Chapter 10: Pollution and Purification of Water (463-494)

- Chapter 11: Toxic Heavy Metals (515-558)

- Chapter 13: Nuclear Energy (626-649)

The grades will be based equally on three one hour tests and a two hour final (each 25%).

The test dates are all on Fridays (you're welcome):

- **Test 1 February 8, 2008**
- **Test 2, March 7, 2008**
- **Test 3, April 11, 2008**

- **The Final Exam will be 2 hours long and has (finally) been scheduled for Wednesday May 14, 2008 at 11 am-1 pm.**

Course Grading
(The scheduled test dates are not negotiable but may be changed by the instructor.)
The grades in this class will be assigned in the following way:

greater than 89.5% = final grade of A
79.5 to 89.5 B
69.5 to 79.5 C
59.5 to 69.5 D
less then 59.5 F
Three 80 minute tests = 75%

The final = 25%

Excessive absences, tardiness, or leaving early will adversely affect your grade in the course.

Course Description
CHM 368 ENVIRONMENTAL CHEMISTRY. The chemical principles underlying the effects of air, water, and soil pollution are covered. Specific attention is paid to gas
phase radical reactions, light absorption characteristics of atmospheric components, solution chemistry of fresh and salt water systems, and the mobility and chemistry of metal components of soil systems. Prerequisites: A minimum grade of C in CHM, 241, 238 and 239 (or concurrent enrollment in CHM 239). Spring. Credit 3.

Course Objectives
- Gain factual knowledge (terminology, classification, methods, and trends) in environmental chemistry
- Learn fundamental principles, generalizations, or theories in environmental chemistry
- Learn to *apply* course material (to improve thinking, problem solving, and decisions) in environmental chemistry
- Developing specific skills, competencies. and points of view needed by professionals in the field of environmental chemistry

Required Calculator
To limit the use of memory-intensive calculators that can store text, formulae, and chemical nomenclature, you are require to use a Texas Instruments TI30 model calculator in this course during in class tests. There are multiple different TI30 models and all of them will work but I suggest the TI30Xa. Other calculators like TI Models TI34 and TI36 don't meet this requirement.

Purpose of this course
The purpose of this 4 semester hour chemistry course is to provide a broad introduction to the chemistry of the environment, specifically centering on the atmosphere, the aquasphere, and the pedosphere.

On-line Assignments
Note that the Blackboard server is routinely backed up in the middle of the night. When this occurs, Blackboard will not be available to you for as long as 1.5 hours. The time of the backup is somewhere around 3 am but may change. Before you arrange your schedule to routinely complete your online assignments in these wee hours, e-mail the SHSU help desk (helpdesk@shsu.edu) and ask them specifically "At what time is the Blackboard server NOT AVAILABLE because of maintenance or backup procedures?" then make your plans accordingly.

<u>Additional Syllabus Material</u>
Additional very important syllabus material is here

📖 Homework

Assigned Homework Problems

- Chapter 1

    1-1 (page 17)
    1-2
    1-10 (equation is rate = $k[O^*][CH_4]$
    Problem 1 (page 50)
    Problem 2 (page 50)
    1-19 (page 59)

- Chapter 2

    Problem 1 (page 69)
    Problem 2 (page 69)
    2-2 (page 71) (see problem 1-10 for the rate equation format)
    2-5

The above problems are for Test 1

- Chapter 4

    4-2
    4-4
    4-5
    4-7

- Chapter 7

    7-1
    7-3
    7-6 (assume you drink 2 L of water day^{-1})

- Chapter 8

    8-1
    8-5
    8-11
    8-12
    8-17
    Question 2 p 416

The above problems are for Test 2

- Chapter 10

    10-4
    10-6
    10-7 [create two half reactions, one for Fe oxidation to Fe^{2+} then the

second for water reduction to H_2 (assume alkaline solution, using OH^{1-} in the water reduction to hydrogen reaction)]
10-9
10-11 (Assume that one mole of iron is required for each mole of chlorine atoms in a compound. Note the formulas of TCE and PCE.)

The above problems are for Test 3
- Chapter 11

    11-2
    11-3
    11-4
    11-5
    11-7
    11-9
    Review Questions 28 and 33

- Chapter 13

    13-1
    13-2
    13-3 [see $(T_h-T_c)/T_h$ equation on page 262]
    13-4
    Review Question 7 (p. 651)

    The above problems are for the final.

📖 External Links

📗 Item   📁 Folder   🌐 External Link   📑 Course Link   ☑ Test   🔴 **Select:**   [Learning Unit ⬍] Go

🌐 [1 ⬍] **Vehicle Design Summit**   Modify | Manage | Copy | Remove

🌐 [2 ⬍] **Units of Radioactivity**   Modify | Manage | Copy | Remove
Enabled: Statistics Tracking

🌐 [3 ⬍] **National Oceanic And Atmospheric**   Modify | Manage | Copy | Remove
Administration's Global Warming Site
These are global waming FAQs.

🌐 [4 ⬍] **TCEQ Ozone Animation site**   Modify | Manage | Copy | Remove

🌐 [5 ⬍] **Total Ozone Mapping Site Animations**   Modify | Manage | Copy | Remove

🌐 [6 ⬍] **Ozone's Problems with Polar Stratospheric** Modify | Manage | Copy | Remove
Clouds
Kinda old but still good

🌐 [7 ⬍] **Polar Stratospheric Clouds**   Modify | Manage | Copy | Remove

🌐 [8 ⬍] **Health Effects of Ozone**   Modify | Manage | Copy | Remove

🌐 [9 ⬍] **Axial Tilt and Seasons**   Modify | Manage | Copy | Remove

🌐 [10 ⬍] **Smog**   Modify | Manage | Copy | Remove
Click, download, and run this .pps file with PowerPoint.

OK