

CHEMISTRY 20204: ENVIRONMENTAL CHEMISTRY SPRING 2012

SYLLABUS AND COURSE INFORMATION

Professor Prashant V. Kamat

Office: 223 Radiation Research Building

Phone: 631-5411

E-mail: pkamat@nd.edu (include Chem20204 in the subject)

Class Web Page: <http://www.nd.edu/~pkamat/chem20204.html>

Office Hours: Tues 4:00 -5:00 pm in Room 235 NSH or by appointment at 223 Rad Lab

Yong-Siou Chen (TA), ychen16@nd.edu 631-6531

Office Hours: Wed 2-3 pm Room 235 NSH or by appointment at Radiation Lab

(Rad Lab has electronic card entry system. Please press button at the Telecom or make a phone call to get entry into the building)

General Information

- **Textbook**
 - *Environmental Chemistry, 4th Edition* by Collins Baird and Michael Cann.
 - *Solution Manual for Environmental Chemistry (Optional)*

Learning Goals for CHEM 20204

- Understand the chemical processes that influence our environment.
- Predict ways to manage environmental pollution.
- Understand the issues related to energy demand and its impact on the environment.
- Work collaboratively with classmates to realize new perspectives on environmental chemistry.
- Establish fundamental knowledge for pursuing advanced chemistry, environmental science & engineering and business science career.

Important Dates:

Test 1 (100 pts) : February 16

Test 2 (100 pts) : March 27

Test 3 (100 pts) : April 26

Final Exam (200pts) : TBA

Assignments 100 pts

Final Letter Grade → (Total pts + extra credit)/600

Topics covered in CHEM 20204

I ATMOSPHERIC CHEMISTRY.

1. Sun light as the source of energy.
2. Stratospheric Ozone.
3. Oxygen Chemistry.
4. Air Pollution
5. Global Warming

II ENERGY

1. Energy Flows and Supplies.
2. Fossil Fuels.
3. Nuclear Energy.
4. Renewable Energy.
5. Alternative Fuels and Energy Utilization.

III. HYDROSPHERE/LITHOSPHERE

1. Water Resources.
2. Acid-Base Chemistry in Natural Waters.
3. Oxygen and Life.
4. Water Pollution and Water Treatment
5. Environmental challenges of 21st century

Extra Credit:

- Extra Credit** : Up to 20 points A 10-15 min presentation in class or a written report on an environmental topic is strongly encouraged. (Students who wish to make a joint presentation should also submit a written report for securing maximum points.)
Additional credits for participation in the class discussions
- Submission Deadline for Outline: January 26, 3:15 pm.** (Outline should contain Name, a title and an abstract or bulleted points. Indicate your choice: Presentation or Report)
- Approved topics will be scheduled for class presentation starting **February 9**. Written reports (paper copy) are due **March 22** (after Spring Break).

Homework

Homework assignments will be posted on the website. Assignment is due on the date indicated. (See <http://www.nd.edu/~pkamat/20204/homework.html>)