

## Syllabus CHEM 312/455 Fall Semester 2013

### *Environmental Chemistry*

Instructor: Dr. Martina Schmeling; Flanner Hall 408, phone: 508-3124, e-mail: [mschmel@luc.edu](mailto:mschmel@luc.edu).

Description: Environmental Chemistry is a very comprehensive topic and we will be able to discuss only the main concepts and some selected topics of current interest during the semester. The major emphasis will be on understanding the three environmental compartments –Atmosphere, Hydrosphere and Lithosphere - and their interconnections as well as on linking these to energy, pollution and conservation.

Objectives: The course will help understand the main principles of the environment and develop skills applicable in any environmental field. The course will also provide factual knowledge about selected topics of environmental and societal concern.

#### *Selected Topics:*

General Introduction about the environment, its compartments and chemical behavior

Hydrosphere: - Natural water: Oceans  
- Natural water: Fresh water  
- Water quality and pollution  
- Water conservation

Lithosphere - Soil and sediments  
& Geosphere: - Buffer and cleaning capacity of soils  
- Waste and waste management  
- Remediation and recycling

Environmental - Persistent organic pollutants (POP's)  
Pollutants: - Hg, As

Atmosphere: - Atmospheric System  
- Stratospheric chemistry  
- Tropospheric chemistry and air pollution

Climate - Global climate change and greenhouse gases  
Change - Carbon Cycle

- Energy:           - Fossil fuel and its impact on the environment  
                       - Alternative energies and their impact on the environment

Class procedure:

Classes are meeting **Tuesday and Thursday from 8:30-9:45am** in **Flanner Hall 105**. **Three in-class exams** are scheduled for the semester (**September 24, October 31, November 26**). The average of the two top ranking exams will be counting 40% of the total grade. There will be **no make-up** exams. A midterm paper (due on **October 10, 2013**) on a given topic will count 20% of the grade and the final exam paper on a given topic will also count 40% of the grade. The final exam paper will be due on **December 9, 2013**. Details regarding all exams will be announced in class. **Office hours** are scheduled for **Monday** and **Thursday** from **10:00am to 11:00am or by appointment**. Course material will be available on-line via Sakai or distributed via e-mail.

Grading:

Average of the top two in-class exams	40%
Midterm paper (due October 10, 2013)	20%
Final exam paper (due December 9, 2013)	40%

Grading Scale:

A:	93% -100%	A-:	87- 92%
B+:	83-86%	B:	78-82%
B-:	74-77%	C+:	69-73%
C:	65-68%	C-:	61-64%
D+:	56-60%	D:	50-55%
F:	0 to 49%		