

**Fall 2008 - CHEMISTRY 211 (Section A1, A2, A3, A4)**  
**Co-requisite:** CHEM 213 - General Chemistry Laboratory II

**Instructor**—Dr. James R. Horn, FW432, 753-8654, [jrhorn@niu.edu](mailto:jrhorn@niu.edu); note: j r horn; short email questions  
**Office Hours** —Mon: 12:30-2:00PM, Wed: 11:00AM-12PM or by appointment

**Recitation Teaching Assistants** — Jay Barre ([jbarre@niu.edu](mailto:jbarre@niu.edu))      **TA Office Hours** — See Blackboard  
**Supplemental Instruction TA** —See Blackboard

**On-Line Course Information (Blackboard):** <https://webcourses.niu.edu>

**Lecture and Recitation Schedule:**

Section A1	Lecture MWF, 8:00 AM, FR 143	Recitation Monday, 10:00 AM FR 238
Section A2	Lecture MWF, 8:00 AM, FR 143	Recitation Monday, 11:00 AM FR 238
Section A3	Lecture MWF, 8:00 AM, FR 143	Recitation Monday, 2:00 PM FR 238
Section A4	Lecture MWF, 8:00 AM, FR 143	Recitation Monday, 12:00 PM FR 205

**Materials:** “*Principles of Chemistry*”, by M. Silberberg (McGraw Hill; 2007)

**Tutors and Lab TA Office Hours:** The Department of Chemistry and Biochemistry maintains a free Tutor Room for General Chemistry students. The Tutor Room is in **Faraday 211**. The Fall 2008 schedule will be posted outside the door. Most semesters it is staffed Monday through Thursday from 8:30 AM to 3:30 PM with a lunch break. On Fridays, the Tutor Room closes at 2:30 PM. General Chemistry laboratory TA office hours are held in Faraday 211. The laboratory TA office hour schedule is posted outside Faraday 211, in the Tutor Room, and at the departmental stockroom window. Students are also encouraged to ask laboratory TAs for assistance in understanding the lecture material.

**Paid Tutors** - Names of tutors for hire are available from Linda Davis in Faraday 319 (Dept. office).

**Exams and Grading**

*Exams* - Tentative dates for the four 100 point hour exams are indicated in the lecture schedule (see next page). The lowest exam grade can be dropped and replaced by the student's Final Exam score. *There will be no make-up exams unless prior arrangements have been made with the instructor. A missed exam will count as the dropped exam when the Final Exam is taken.*

*Recitation* - The recitation grade (100 points possible) will be based on nine (online) 6-point quizzes, four 5-point homework assignments, and attendance (2 points for each of 14 class meetings). Late assignments will not be accepted. There will be no make-up quizzes.

*Final Exam* - The 100 point optional final exam will be comprehensive and will be given on Monday, December 8<sup>th</sup> from 8-9:50 AM. The Final exam score will replace your lowest exam score.

**Total points = 500 points** (hourly exams = 400; recitation = 100; “optional” final exam = 100)

**Grading scale:** A > 90% (450 pts.), B > 80% (400 pts.), C > 70% (350 pts.), D > 60% (300 pts.), F < 60%

*Any student who may need an accommodation due to a disability, please make an appointment to see me during my office hours, or when convenient. A letter from Disability Support Services authorizing your accommodations is usually needed before accommodations can be granted.*

## TENTATIVE LECTURE SCHEDULE

<u>WEEK</u>	<u>CHAPTER/TOPIC</u>	<u>Quiz, Homework, Exam</u>
1. Aug. 25-29	<b>12:</b> Liquids, Solids, and Phase Changes	
2. Sept. 1-5*	<b>12:</b> Continued	
3. Sept 8-12	<b>13:</b> Properties of Solutions	
4. Sept. 15-19	<b>13:</b> Continued / <b>16:</b> Kinetics	<b>Exam I (Wed)</b>
5. Sept. 22-26	<b>16:</b> Continued	
6. Sept. 29-Oct. 3	<b>17:</b> Equilibrium	
7. Oct. 6-10	<b>17:</b> Continued / <b>18:</b> Acid Base Equilibria	<b>Exam II (Wed)</b>
8. Oct. 13-17	<b>18:</b> Continued	
9. Oct. 20-24	<b>18:</b> Continued / <b>19:</b> Ionic Equilibria in Aqueous Systems	
10. Oct. 27-31	<b>19:</b> Continued / <b>20:</b> Thermodynamics	
11. Nov. 3-7	<b>20:</b> Continued	<b>Exam III (Fri)</b>
12. Nov. 10-14	<b>21:</b> Electrochemistry	
13. Nov. 17-21	<b>21:</b> Continued	
14. Nov. 24 *	<b>23:</b> Nuclear Reactions	
15. Dec. 1-5	<b>23:</b> Continued	<b>Exam IV (Wed)</b>
16. Dec 8 <sup>th</sup>	Final → 8-9:50 a.m.	

\*Labor Day Sept. 1<sup>st</sup> (University Close); Thanksgiving Break Nov 26<sup>th</sup> –Nov 30<sup>th</sup>

### CHEMISTRY 211 - GENERAL EDUCATION AND COURSE CONTENT OBJECTIVES

#### General Education Course Objectives

- Improve ability to think critically and logically
- Improve ability to reason quantitatively and to perform basic chemical computations
- Improve ability to interpret mathematical models
- Learn how to use the scientific method and theories to understand chemical phenomena
- Develop an appreciation for the importance of the role of chemistry in everyday life
- Develop an understanding of the historical development of the field of chemistry

#### Content Objectives of this Course

- Become familiar with the properties of solutions and be able to calculate concentrations of species in solution
- Understand the concepts behind chemical kinetics and reactions rates
- Understand acid-base and ionic equilibria, and appreciate real-world applications of these equilibria
- Understand entropy, free energy, and the direction of chemical reactions
- Understand the difference between voltaic and electrolytic cells, and be able to calculate the cell potential of a voltaic cell
- Understand the nuclear properties of isotopes, including nuclear reactions, and the practical applications of nuclear chemistry.