

Spring 2010 - CHEMISTRY 211/211H (Section R005-R008, R0H5-R0H8)

Co-requisite: CHEM 213 - General Chemistry Laboratory II

Instructor—Dr. David S. Ballantine, FW424, 753-6857, dballant@niu.edu

Office Hours – Monday - Friday: 9:30 – 10:45 or by appointment

Recitation TA – Dione Griffin, FW313 (Z1627937@students.niu.edu),

TA Office Hours – (to be posted)

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

Materials: “*Principles of Chemistry*”, by M. Silberberg 2nd Edition (McGraw Hill; 2010); and a CPS Clicker (available at bookstore)

Lecture and Recitation Schedule:

Section R005/R0H5 Lecture MWF, 11:00 AM, FR 144 Recitation Thursday, 11:00 AM FR 205

Section R006/R0H6 Lecture MWF, 11:00 AM, FR 144 Recitation Thursday, 12:30 AM FR 205

Section R007/R0H7 Lecture MWF, 11:00 AM, FR 144 Recitation Thursday, 2:00 PM FR 205

Section R008/R0H8 Lecture MWF, 11:00 AM, FR 144 Recitation Thursday, 3:30 PM FR 205

Section R0H5-R0H8: Additional meeting location and time: TBD

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 247** and the schedule will be posted online (http://www.chembio.niu.edu/chembio/aboutus/help_room.shtml) and outside the help room door.

General Chemistry laboratory TA office hours are also held in Faraday 247. 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 Recitation/participation grade. **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.***

Recitation/lecture participation (100 points possible): 40% homework/quizzes, 40% lecture participation (clickers), and 20% recitation attendance. There will be no make-up quizzes. Classroom Performance System (CPS) clickers are to be brought to each lecture for student participation points.

Final Exam - The 100 point final exam will be comprehensive and will be given on Wednesday, May 11th from 10:00 - 11:50 AM.

Total points =500 points (exams = 400; recitation = 100; 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>Exam</u>
1. Jan. 19-21*	12: Liquids, Solids, and Phase Changes	
2. Jan. 24-28*	12: Continued	
3. Jan. 31- Feb 4	13: Properties of Solutions	
4. Feb. 7-11	13: Continued / 16: Kinetics	Exam I (F) Feb 11
5. Feb. 14-18	16: Continued	
6. Feb. 21-25	17: Equilibrium	
7. Feb. 28-Mar 4	17: Continued / 18: Acid Base Equilibria	
8. Mar. 7-11	18: Continued	Exam II (W) Mar 9
9. Mar. 14-18	SPRING RECESS	
10. Mar. 21-25	18: Continued / 19: Ionic Equilibria in Aqueous Systems	
11. Mar. 28-Apr 1	19: Continued / 20: Thermodynamics	
12. April 4-8	20: Continued	Exam III (F) April 8
13. April. 11-15	21: Electrochemistry	
14. April 18-22	21: Continued	
15. April 25-29	23: Nuclear Reactions	
16. May 2-4*	23: Continued	Exam IV (M) May 2
Final May 11th	10AM-11:50AM	FINAL

*MLK Day Jan 17 (University Closed); Spring Recess March 12-20, May 6th Reading Day (no class)

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.