

Spring 2016 - CHEMISTRY 211H (Honors General Chemistry 2)

Co-requisite: CHEM 213 - General Chemistry Laboratory II

Instructor—Dr. James R. Horn, FW432, 753-8654, jrhorn@niu.edu (note: j r horn): short email questions

Office Hours—Monday:1-2pm, Thurs: 11:00 am-noon or by appointment

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

Materials: Textbook or eBook: “*Principles of Chemistry*”, by M. Silberberg 3rd Edition (McGraw Hill; 2013) and access to Connect (McGraw Hill, through purchase of new book, ebook, or purchased separately). The eBook version of the textbook is available (w/ ConnectPlus) which provides access to textbook and online homework

Lecture and Recitation Schedule:

Honors Section Lecture-MWF, 11:00-11:50 AM, Davis Hall 121, Recitation-Thursday, 2:00-2:50 PM, FW 201

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.

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 three 100-point hour exams are indicated in the lecture schedule (see next page). ***The lowest exam grade will be dropped. 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/HW – The recitation grade (150 points possible) will be based on four 10-point quizzes, eight 10-point homework assignments and attendance/participation (30 points possible). There will be no make-up quizzes. The homework will be administered online using Connect. Students are encouraged to use LearnSmart study modules in Connect. Extra credit will be assigned for each completed LearnSmart module. *The recitation meeting will provide a distinct “honors experience,” connecting learning objectives to current issues in Chemistry and Biochemistry.*

Connect Homework –The online homework is accessed through blackboard (look for the homework link). You will need the *enrollment key* (provided with book purchase or purchased separately). Please note posted deadlines for assignments.

Final Exam - The 150 point final exam will be comprehensive and will be given on Wednesday, May 6th from 10-11:50 AM.

Total points = 500 points (hourly exams = 200, with lowest exam dropped; recitation = 150; final exam = 150)

Grading scale: The grades will be determined according to the percentage of points out the total possible 500 points:

≥93=A, 90-92=A-, 87-89=B+, 83-86=B, 80-82=B-, 77-79=C+, 70-76=C, 60-69=D, ≤59= F.

This scale may be revised downward (not upward), but this is not guaranteed.

Academic Integrity:

Good academic work must be based on honesty. The attempt of any student to present as his or her own work that which he or she has not produced is regarded by the faculty and administration as a serious offense. Students are considered to have cheated if they copy the work of another during an examination or turn in a paper or an assignment written, in whole or in part, by someone else. Students are responsible for plagiarism, intentional or not, if they copy material from books, magazines, or other sources without identifying and acknowledging those sources or if they paraphrase ideas from such sources without acknowledging them. Students responsible for, or assisting others in, either cheating or plagiarism on an assignment, quiz, or examination may receive a grade of F for the course involved and may be suspended or dismissed from the university.

Accommodations for students with disabilities-

Northern Illinois University is committed to providing an accessible educational environment in collaboration with the Disability Resource Center (DRC). Any student requiring an academic accommodation due to a disability should let his or her faculty member know as soon as possible. Students who need academic accommodations based on the impact of a disability will be encouraged to contact the DRC if they have not done so already. The DRC is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1303 (V) or drc@niu.edu.

I look forward to talking with you to learn how I may be helpful in enhancing your academic success in this course.

TENTATIVE LECTURE SCHEDULE

<u>WEEK</u>	<u>CHAPTER/TOPIC</u>	<u>Exam</u>
1. Jan. 19-22*	*12: Liquids, Solids, and Phase Changes	
2. Jan. 25-29	12: Continued	
3. Feb 1-5	13: Properties of Solutions	Quiz 1
4. Feb. 8-12	13: Continued / 16: Kinetics	
5. Feb. 15-19	16: Continued	Exam I (M) Feb 15
6. Feb. 22-26	17: Equilibrium	
7. Feb. 29-Mar.4	17: Continued / 18: Acid Base Equilibria	
8. Mar. 7-11	18: Continued	Quiz 2
9. Mar. 13-20	SPRING RECESS	
10. Mar. 21-25	18: Continued / 19: Ionic Equilibria in Aqueous Systems	
11. Mar. 28-April 1	19: Continued / 20: Thermodynamics	Exam II (M) Mar 28
12. April 4-8	20: Continued	Quiz 3
13. April. 11-15	21: Electrochemistry	
14. April 18-22	21: Continued	Exam III (F) April 22
15. April 25-29	23: Nuclear Reactions	
16. May 2-6*	23: Continued	Quiz 4
Final Wed. May 11	10-11:50AM	FINAL

*Jan. 18 Martin Luther King Day (University closed); Mar. 13-20 Spring Break (University closed), 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.

Additional Information

CHEM 211 is a challenging course. There are many resources available to help you succeed – it is *your* responsibility to take advantage of them. Success will require diligent study habits, paying attention to announcements and attendance at all scheduled lectures and labs. As a general rule of thumb, you should be studying about 3 hours per week per credit hour so, for CHEM 211, that equals approximately 9 hours per week outside of the classroom. In addition to the departmental resources described above, the following university resources may be of benefit to you:

- ✱ NIU Office of Student Academic Success: <http://www.niu.edu/osas/index.shtml>
- ✱ NIU Tutoring Centers: <http://www.niu.edu/access/tutoringcenters/>
- ✱ One-on-one tutoring: <http://www.niu.edu/access/pal/>

Course Preparation: McGraw Hill has released a product, LearnSmart Prep, that is an online tool to review the background material that you are expected to be proficient in for CHEM 211 (math review and CHEM 210 review). LearnSmart Prep costs ~\$30.

In the lecture hall and recitation classroom, common courtesy is expected. Don't engage in activities that interfere with my teaching or that interfere with your fellow students learning. If you use a computer or tablet in class, use it only for class related activities. If you need to arrive late or leave early, please do so discretely. Anyone who violates these basic standards may be asked to leave the lecture hall or recitation classroom.