Summer 2017 - CHEMISTRY 211
Co-requisite: CHEM 213 - General Chemistry Laboratory II

Instructor–Dr. Leifker, FR336, mleifker@niu.edu
Office Hours – Tu/Th: 8:00 -9:00 am; or by appointment

Lecture Schedule – M Tu W Th, 9:30 am – 12:15 pm; LaTourette 201

Lab Schedule – M Tu W Th, 1:00 – 3:50 pm; Faraday 204

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

***Materials**: "General Chemistry-Atoms First", by McMurry and Fay, 2nd Edition (Pearson; 2014) and Pearson MasteringChemistry (on-line homework, assessment and study tools utilizing adaptive learning). Mastering Chemistry includes an eBook and a Study Area with self-quizzes, videos, activities, math resources etc. that you are strongly encouraged to use. An access code for MasteringChemistry is bundled with the textbook or you may purchase one on-line the first time that you open an assignment on Blackboard. You must purchase the code labeled "Modified Mastering" in order for it to work with Blackboard. The University bookstore also sells stand-alone MasteringChemistry access codes. The MasteringChemistry access code costs $114 and is good for two semesters. You may sign up for a 14-day free trial of MasteringChemistry the first time that you access our course but be sure to use the same login credentials when you purchase the code after the free trial. A solutions manual and study guide are available for purchase for the textbook at the Pearson website but they are not required. The Faraday library has many older chemistry textbooks and math tutorial books that you may find useful.

*Only relevant if you did not take Chem 210 in Spring 2017 or 4-week Summer 2017 semesters

Exams and Grading

Exams - 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.***

HW – The online homework will be administered using the on-line MasteringChemistry system consisting of nine 11-point assignments. Due dates will be every Saturday @ 11:59 pm. **There will be no make-up homework.**

Final Exam - The 100-point final exam will be comprehensive and will be given on the last day of class.

Total points = 400 points (hourly exams = 200, with lowest exam dropped; homework = 100; final exam = 100)

Grading scale: The grades will be determined according to the percentage of points out the total possible 400 points:

A ≥ 90% B ≥ 80% C ≥ 70% D ≥ 60% F < 60%

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.

TENTATIVE LECTURE SCHEDULE

Lecture Date	CHAPTER/TOPIC	Exam
1. Jul. 17	**10:** Liquids, Solids, and Phase Changes	
2. Jul. 18	**10:** Continued	
3. Jul. 19	**11:** Solutions and Their Properties	
4. Jul. 20	**11:** Continued / **12:** Rates and Mechanisms	**Exam I**
5. Jul. 24	**12:** Continued	
6. Jul. 25	**13:** Chemical Equilibrium	
7. Jul. 26	**13:** Continued	
8. Jul. 27	**14:** Aqueous Equilibrium: Acids and Bases	**Exam II**
9. Jul. 31	**14:** Continued / **15:** Applications of Aqueous Equilibria	
10. Aug. 1	**15:** Continued / **16:** Thermodynamics	
11. Aug. 2	**16:** Continued	
12. Aug. 3	**16:** Continued/ **17.** Electrochemistry	**Exam III**
13. Aug. 7	**17:** Continued	
14. Aug. 8	**22:** Nuclear Chemistry	
15. Aug. 9	**22:**Continued	
16. Aug. 10	Flex/Final Exam	**FINAL**

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, especially given the accelerated pace in the summer semester. 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, which 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/

In the lecture hall and lab classroom, common courtesy is expected. Do not engage in activities that interfere with my teaching (or your TA's 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.