

CHEM 211, Section 2
MWF 11:00–11:50 AM
Faraday Hall 143

Spring, 2016

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<u>Week/Dates</u>	<u>Chapter</u>	<u>Topic</u>
1 1/20–1/22	12	Liquids, Solids, and Phase Changes
2 1/25–1/29	12	Liquids, Solids, and Phase Changes
3 2/1–2/5	13	Properties of Solutions
4 2/8–2/12	13 16	Properties of Solutions Chemical Kinetics
5 Monday 2/15 2/17–2/19	16	Exam 1 covering Chapters 12–13 Chemical Kinetics
6 2/22–2/26	16 17	Chemical Kinetics Chemical Equilibrium
7 2/29–3/4	17	Chemical Equilibrium
8 3/7–3/11	18	Acid Base Equilibria
3/14–3/18		No Lectures; Spring Break
9 3/21–3/25	18 19	Acid Base Equilibria Ionic Equilibria in Aqueous Systems
10 Monday 3/28 3/30–4/1	19	Exam 2 covering Chapters 12–13, 16–17 emphasizing 16–17 Ionic Equilibria in Aqueous Systems
11 4/4–4/8	20	Thermodynamics
12 4/11–4/15	20 21	Thermodynamics Electrochemistry
13 4/18–4/22	21	Electrochemistry
14 Monday 4/25 14 4/25–4/29	21 22	Exam 3 covering Chapters 12–13, 16–20 emphasizing 18–20 Electrochemistry Transition Elements and Coordination Chemistry
15 5/2– 5/4 5/6	22	Transition Elements and Coordination Chemistry No Lecture: Reading Day
16 Wednesday, 5/11 10:00 – 11:50 AM		Exam 4 covering Chapters 12–13, 16–22 emphasizing 21–22 Comprehensive Final Exam

INFORMATION AND POLICIES

This syllabus is a contract between us. I promise that the exams will be given on the days stated, and that homework assignment time slots will be announced in lecture. In return, you promise to read the syllabus before asking questions about class procedure. *I reserve the right to deduct 5 points from your overall total in the class every time you ask a question answered on this syllabus.*

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 CHEM 211

- Become familiar with the physics of phases, phase diagrams, and phase equilibria
- Become familiar with properties of solutions and 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, the direction of chemical reactions, and reaction spontaneity
- Understand the difference between voltaic and electrolytic cells, and calculate the cell potential of a voltaic cell
- Become familiar with transition metal coordination chemistry and nomenclature.

Homework, Exams and Grades: There will be three examinations given during the lecture times within the semester (100 points each, see schedule for dates). A fourth examination (100 points) and a comprehensive Final examination (100 points) will be given during the Final Examination period. The exams will consist of 25 multiple-choice questions, and will be scored by Scantron. To minimize tardiness and the potential for cheating, once any student turns in their Scantron and leaves the examination room, no students will be allowed to enter the examination room to begin the exam. Requests for scoring checks must be made within one week from the day the scores are posted on Blackboard.

In addition, you must study online using the CONNECT/LearnSmart system accessed from BlackBoard. The CONNECT homework is worth 70 points toward your Recitation score (see below). Each LearnSmart module is worth 2 Extra Credit points. See the last page for more information on using CONNECT/LearnSmart.

The lowest score of the four regular exams will be dropped. This allows you to miss an exam if absolutely necessary, and minimizes the effect of one poor score on the overall grade. Because of this policy, **there will be no makeup exams**. If you miss an exam without a documented excuse, you earn a score of zero for that exam. If you miss the comprehensive Final Exam without a documented excuse, **you will receive a grade of F for the course, regardless of your performance on the previous exams**. If you miss an exam with a documented excuse, you will be assigned a score for that exam based statistically on your performance on other assessments. The professor will deal with issues affecting your ability to attend exams (such as medical problems or athletic events) on a case-by-case basis. His decision is final.

Your overall final class grade will be determined as follows:

Best Three Scores of the Four Regular Exams:	300 points maximum
Recitation Score	100 points maximum
<u>Comprehensive Final Exam:</u>	<u>100 points maximum</u>
Total:	500 points maximum

The grading scale will be 90% (450 points)+ = A, 80–89.9% (400–449 points) = B, 70–79.9% (350–399 points) = C, 60–69.9% (300–349 points) = D, <59.9% (299 points) = F. This scale *may* be revised downward. **There will not be a curve.**

Study Resources

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 outside of the classroom for *at minimum* 3 hours per week per credit hour, so **9 hours per week**.

Text: M. Silberberg. *Principles of General Chemistry*, 3rd Ed., McGraw Hill, 2013. You must purchase a license code for McGraw-Hill's CONNECT/LearnSmart on-line assignments. Having a CONNECT license gives you access to the text as an ebook and to the Smartbook in LearnSmart. Consequently, you are not required to purchase the hardbound copy of the textbook. An access code for CONNECT is bundled with the textbook, is available separately from the NIU Bookstore, or may be purchased on-line the first time that you open an assignment on Blackboard. The CONNECT license code access code costs \$120 and is good for two semesters.

***Note:** the NIU-specific version of the textbook lacks Chapter 22. Therefore when we cover that chapter, you will need to use either the full textbook or the ebook.

Blackboard: Relevant class documents, such as this syllabus, and exam scores will be posted on Blackboard. In addition, LearnSmart and CONNECT will be available as part of the McGraw-Hill system implemented with BlackBoard. Thus, you should make certain you know how to access BlackBoard.

Office Hours: I will hold office hours on Mondays and Fridays, from 1:00–1:55 PM. You are welcome to come to LaTourette (Faraday West) 309 without an appointment for class assistance during these times. If you can't make it then, you may make an appointment for another time. However, since I have other responsibilities, appointments will be limited. You can contact me by e-mail to ask short, concise questions or for appointments. However, be aware I check my e-mail sporadically, so the turnaround time will probably not be instantaneous.

Recitation: Each of you must attend the recitation section assigned when you registered for the course (see schedule below). Recitation will involve problem-solving and discussion of course material. The recitation score (100 points) will be based on attendance (2 points for each of 15 class meetings = 30 points) and on CONNECT homework assignments (70 points). There will be 10 CONNECT assignments offered at appropriate times throughout the semester. The professor will announce in lecture when the assignments are available, whereupon students will have 48 hours to complete them. Each assignment will be worth 10 points; the best 7 of these will be included in the recitation score. Because of this policy, **there will be no makeup CONNECT assignments.**

The recitation TA is Ashley De Lio. Her office is LaTourette (aka Faraday West) 310. She will inform you of her office hours and other aspects of recitation.

Recitation Schedule

Section R005 Thursday, 11:00–11:50 AM FR 205

Section R006 Thursday, 12:30–1:20 PM FR 205

Section R007 Thursday, 2:00–2:50 PM FR 205

Section R008 Thursday, 3:30–4:20 PM FR 205

Free tutoring and resources: The Department of Chemistry & Biochemistry maintains Faraday Hall 247 as a free tutoring room for the benefit of General Chemistry students. It is staffed irregularly (approximately 8:30 AM –3:30 PM Monday through Friday); look for the schedule sheets posted around the Faraday complex and near the tutoring room. The Department has a satellite library in Faraday Hall, Room 212. A number of old chemistry texts are available there. These older texts might explain a topic more clearly or provide extra end-of-chapter problems that will help you study for the class. Ask the library staff for help finding them.

You should take advantage of the Recitation TA's office hours and appointment opportunities. You may ask your laboratory TA for assistance in understanding the lecture material. However, you should understand that lab TAs have other responsibilities, and may not accommodate requests instantly **or at all**.

Solving the problems at the end of each chapter in the text, *with a time limit*, is good practice for the exams.

In addition to the resources described above, the following university resources may benefit 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/>

Supplemental Instruction (SI): The NIU ACCESS program provides further assistance with course material through its Supplemental Instruction (SI) system. If an SI person is available for this section, she/he will offer office hours and help sessions at convenient times, as well as other class assistance at their discretion. Further information on this will be provided if and when available.

Tutoring and resources that aren't free: Names of tutors who charge for their services are available from Linda Davis in Faraday 319 (the Chemistry Department Office).

LearnSmart: LearnSmart is an online set of adaptive learning modules that many students find useful in practicing course material. Its use is entirely optional for this section of Chem 211, but accomplishing each module will be worth 2 Extra Credit points. An access code for Connect/LearnSmart is bundled with the textbook. You may have one from Chem 210; it should still work for Chem 211. Alternatively, you may purchase a code on-line the first time that you open an assignment on Blackboard. See the last page for more information on using CONNECT/LearnSmart.

NIU Policies

Attendance: Students are expected to comply with the attendance terms described in the Undergraduate Catalog: Academic Regulations: Attendance section. In the lecture hall and recitation classroom, common courtesy is expected. If you need to arrive late or leave early, do so discretely. Don't engage in activities that interfere with the teaching process or with your fellow students' learning during lecture or recitation. Anyone who violates these basic standards may be asked to leave the lecture hall or recitation classroom.

Accommodations for Students with Disabilities: NIU abides by Section 504 of the Rehabilitation Act of 1973, which mandates that reasonable accommodations be provided for qualified students with disabilities. Students with disabilities can obtain a range of services, including housing, transportation, adaptation of printed materials, and advocacy with faculty and staff. A student who believes that reasonable accommodations with respect to course work or other academic requirements may be appropriate in consideration of a disability must: (1) provide the required verification of the disability to the Disabilities Resource Center (4th floor of the University Health Services building; 815-753-1303; drc@niu.edu); (2) meet with the DRC to determine appropriate accommodations; and (3) inform the faculty member in charge of the academic activity of the need for accommodation. Students must make the requests to the DRC and faculty in a timely enough manner for accommodations to be appropriately considered and reviewed by the university. If contacted by the faculty member, the staff of the DRC will provide advice about accommodations that may be indicated in the particular case. Students who make requests for reasonable accommodations are expected to follow the policies and procedures of the DRC in this process. **In particular, students must provide the faculty with the appropriate paperwork at least seven days in advance of the quiz/exam to which it applies.**

You can access the Accessibility Portal here: <http://www.niu.edu/accessibility/>.

Academic Integrity and Dishonesty: Students are expected to comply with the academic integrity terms described in the Undergraduate Catalog: Academic Regulations: Academic Integrity section. As applied to CHEM 211, academic dishonesty includes, but is not limited to, looking at or copying work from another student's exam during a testing session, allowing another student to copy work, and using unauthorized materials (e.g., lecture notes, crib sheets, textbooks, prohibited electronic devices including pagers, cell phones, headphones, or programmable calculators containing stored equations, formulas, or text) during exams. **CHEATING IN ANY FORM WILL NOT BE TOLERATED.** Violation of any of these terms will result, at minimum, in awarding a score of zero for the assignment in question. 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.

NIU provides an online tutorial on academic integrity. Students are encouraged to take the tutorial, at <http://www.niu.edu/ai/students/>.

McGraw Hill On-Line Resources: CONNECT Plus (CONNECT) and LearnSmart

Note: CONNECT and LearnSmart cannot be accessed through smart phones and iPads; you must use a computer.

Note 2: Experience has shown that accessing CONNECT/LearnSmart through BlackBoard works far better than accessing them directly through the MHHE website. In particular, scores often do not transfer to Grade Center properly unless CONNECT/LearnSmart was accessed through BlackBoard. **I recommend in the strongest terms that you access CONNECT/LearnSmart through BlackBoard.**

Grading in CHEM 211 includes points based on performance using on-line instructional technologies. CONNECT Plus and LearnSmart are products that are linked to the McGraw Hill textbook, and you must register for these components using the access codes purchased separately or combined with the required textbook. These on-line components are described here, along with the relative weights assigned to each component.

LearnSmart

LearnSmart is an adaptive learning technology that uses student responses to evaluate mastery of content, and tailors tutorial-style learning sessions to help students increase proficiency. Once students have demonstrated mastery of a given concept, it introduces more advanced concepts until the student has achieved a given level of competence with the content. If the program identifies an area in which the student requires additional practice, it will provide links and/or references to specific sections in the textbook so the student can do additional reading, *etc.*

The LearnSmart modules on Blackboard are correlated with the content of individual lectures, and students are expected to read the appropriate sections and complete the LearnSmart module *before* lecture! There are 10 LearnSmart modules on Blackboard, with due dates tied to the lecture schedule. Complete accomplishment of the tasks associated with each LearnSmart module is worth 2 Extra Credit points; thus 20 Extra Credit points are available.

CONNECT

CONNECT is an on-line homework package that is intended to provide students with additional practice working with concepts. Although performance on the homework is part of the overall grade, it is also a useful self-assessment tool. If, while working on a given homework module, you discover that you are having difficulty with a particular concept or problem, you should use that as a guide in preparing for the exams. Try additional problems until you are confident of your abilities, or seek additional help as needed before the next exam.

Homework problems are assigned using either pooled sets of questions or algorithmic questions that will vary data so that two students are unlikely to receive the same set of problems. A student may attempt the homework assignment multiple times (maximum of three attempts) and the highest score achieved before the due date will be recorded. *Remember, you have only 48 hours to complete a CONNECT assignment. DO NOT WAIT UNTIL THE HOUR BEFORE THE DEADLINE TO BEGIN THE HOMEWORK.* This is a recipe for failure. Rather, begin the homework assignments as close as possible to the dates when the corresponding material is covered in lecture so that it is fresh in your mind, and so you have time to seek help if needed before the assignment is due.

There are 10 CONNECT homework assignments, each worth 10 points. The best 7 scores of these will be applied to the overall recitation score.