

**CHEM 210**, Section 2  
Faraday Hall 143  
M W F 11:00–11:50 AM  
Recitations R0005–R0008 (Wednesdays 8AM, 9AM, 10AM, 12 PM)  
Recitation TA: Jeremy Hess

**Fall, 2013**

Lecturer: Prof. T. M. Gilbert  
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	<u>Week</u>	<u>Chapter</u>	<u>Topic</u>
1	8/26–8/30	1 2	Keys to the Study of Chemistry The Components of Matter
2	9/2 9/4–9/6 9/4	2	<b>No Lecture; Labor Day Holiday</b> The Components of Matter <b>Recitation Quiz 1</b>
3	9/9 9/11 9/13	3 3	Stoichiometry of Formulas and Equations <b>Exam 1 covering Chapters 1–2</b> Stoichiometry of Formulas and Equations
4	9/16–9/20	3	Stoichiometry of Formulas and Equations
5	9/23–9/27	4	Three Major Classes of Chemical Reactions
6	9/30–10/4 10/2	4 5	Three Major Classes of Chemical Reactions Gases and the Kinetic-Molecular Theory <b>Recitation Quiz 2</b>
7	10/7–10/9 10/11	5	Gases and the Kinetic-Molecular Theory <b>Exam 2 covering Chapters 1–5 with emphasis on Chapters 3–5</b>
8	10/14–10/18	6	Thermochemistry: Energy Flow & Change
9	10/21–10/25 10/23	6 7	Thermochemistry: Energy Flow & Change Quantum Theory and Atomic Structure <b>Recitation Quiz 3</b>
10	10/28–11/1	7 8	Quantum Theory and Atomic Structure Electron Configuration and Chemical Periodicity
11	11/4–11/6 11/8	8 9	Electron Configuration and Chemical Periodicity Models of Chemical Bonding <b>Exam 3 covering Chapters 1–8 with emphasis on Chapters 5–8</b>
12	11/11–11/15	9, 10	Models of Chemical Bonding; The Shapes of Molecules
13	11/18–11/22 11/20	10	The Shapes of Molecules <b>Recitation Quiz 4</b>
14	11/25 11/27–11/29	11	Theories of Covalent Bonding <b>No Lectures; Thanksgiving Holiday</b>
15	12/5–12/6	11	Theories of Covalent Bonding
16	<b>Wednesday, 12/11, 10:00-11:50 am</b>		<b>Exam 4 covering Chapters 1–11 with emphasis on Chapters 9–11</b> <b>Comprehensive Final Exam covering Chapters 1–11</b>

**Text:** M. S. Silberberg, "Principles of General Chemistry " 3rd Edition, McGraw Hill, 2013. A study guide with solutions is available, and students will almost certainly find it useful. Recommended for those students with marginal math backgrounds are: D. M. Goldish, "Basic Mathematics for Beginning Chemistry", 4th Ed, MacMillan, 1990; D. J. Dahm & E. A. Nelson, "Calculations in Chemistry: An Introduction", W. W. Norton, 2012. Copies of both are available from booksellers; copies of Goldish are on reserve in Faraday Library (Faraday Hall 212).

Also available in Faraday Library are many old chemistry texts. These 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.

## INFORMATION and POLICIES

### General Education Course Objectives

- Improve ability to think critically and logically.
- Improve ability to reason quantitatively, to interpret mathematical models, and to perform basic chemical computations.
- 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 210

- Understand the concepts of matter and energy and the specifics of SI units of measurement.
- Understand atoms and ions and their subatomic components.
- Learn chemical nomenclature, chemical reaction formalisms, and the fundamentals of stoichiometry calculations.
- Develop the ability to predict outcomes of chemical reactions from knowledge of reactants and reaction types.
- Understand the chemical basis for the physical behavior of gases, liquids, and solids.
- Learn the electronic structures of atoms and ions, and understand their relationship to periodic properties and chemical reactivity.
- Correctly predict the shapes of complex molecules and ions, and how they arise from theories of chemical bonding.

**Office Hours:** I will hold office hours on Mondays and Wednesdays, from 10:00–11:00 AM. You are welcome to come to my office 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 to make appointments; however, the turnaround time may not be instantaneous.

**Assistance with the Course Material:** The Department of Chemistry & Biochemistry maintains Faraday Hall 246 as a free tutoring room for General Chemistry students. It is staffed irregularly; look for the schedule sheets posted around the Faraday complex and near the tutoring room. Names of tutors who charge for their services are available from Linda Davis in Faraday 319 (the Chemistry Department Office). Students may ask their recitation and laboratory TA's for assistance in understanding the lecture material; however, it should be understood that TAs have other responsibilities, and may not accommodate requests instantly or at all.

In addition, the NIU ACCESS program provides assistance with course material through its Supplemental Instruction (SI) system. Further information on this will be provided when available.

**Blackboard:** Relevant class documents, such as exam scores will be posted on Blackboard. In addition, quizzes, homework, and LearnSmart will be available as part of the Connect system implemented with BlackBoard. Thus, you should make certain you know how to access BlackBoard. Syllabi in PDF format are available by following the links beginning at <http://www.chembio.niu.edu>.

**Connect Plus (on-line homework and LearnSmart adaptive learning):** An access code for Connect is bundled with the Textbook. Alternatively, you may purchase one on-line the first time that you open an assignment on Blackboard.

**Recitation:** Each of you must attend the recitation section assigned when you registered for the course. Recitation sessions will involve problem solving, and discussions of the course material and homework. The recitation score (100 points) will be based on four 10-point quizzes given during the recitation session (40 points), ten 4-point homework assignments given through the CONNECT system (40 points), and attendance (2 points for each of 10 quiz-free class meetings). LearnSmart can be used for extra credit in recitation (20 points). **There will be no make-up quizzes or homework.** The professor will deal with any issues affecting your ability to attend recitation, take quizzes or turn in homework (such as medical problems or snow closures), on a case-by-case basis. His decision is final. The recitation score will replace the lowest examination grade if it is higher (see below).

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

**Exams and Grades:** There will be three examinations (100 points each) during the semester. During the Final Examination period, there will be two exams: a fourth exam (100 points) and a comprehensive final examination (100 points). All exams will consist of 25 multiple-choice questions. Your overall final class grade will be determined as follows:

Best of Four Exams and Recitation:	400 points maximum
<u>Final Exam:</u>	<u>100 points maximum</u>
Total:	500 points maximum

The fact that the recitation score can replace one exam score allows you to miss an exam if absolutely necessary and lessens the effect of one poor exam on the overall grade. **There will be no makeup exams or extra credit.** The professor will deal with any issues that affect your ability to take exams (such as medical problems or snow closures) on a case-by-case basis. His decision is final.

Keys for the exams will be posted on Blackboard. Requests for checks of Scantron forms must be made directly to me by the end of lecture one week after the scored exam is returned to you.

The grading scale will be  $\geq 85\%$  (425 points) = A, 80–84.9% (400–424 points) = A–, 77–79.9% (385–399 points) = B+, 73–76.9% (365–384 points) = B, 70–72.9% (350–364 points) = B–, 67–69.9% (335–349 points) = C+, 60–66.9% (300–334 points) = C, 50–59.9% (250–299 points) = D, <50% (249 points) = F. The scale may be revised slightly downward; **there will not be a curve.** In particular, the F range is guaranteed to start at 249 points.

## **Academic Integrity and Dishonesty**

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. 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, turning in a paper or an assignment written, in whole or in part, by someone else, and using unauthorized materials (e.g., lecture notes, crib sheets, textbooks, prohibited electronic devices including pagers, cell phones, or programmable calculators containing stored equations, formulas, or text) during exams. 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. **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.

A faculty member has original jurisdiction over any instances of academic misconduct that occur in a course the faculty member is teaching. The student shall be given the opportunity to resolve the matter in meetings with the faculty member and the department chair. If the student does not dispute the facts of the incident, the faculty member may elect to resolve the matter at that level by levying a sanction no greater than an F for that course. The faculty member shall notify the student in writing whenever such action is taken, and the Office of Community Standards and Student Conduct shall receive a copy of the Academic Misconduct Incident Report indicating final disposition of the case, which will be placed in the student's judicial file. In all matters where the charge of academic misconduct is disputed by the student, or if the faculty member feels a sanction greater than an F in the course is appropriate (such as repeated offenses or flagrant violations), the faculty member shall refer the matter to the Office of Community Standards and Student Conduct, making use of the Academic Misconduct Incident Report. Additional sanctions greater than an F in a course can be levied only through the University Judicial System. With regards to finding the student either responsible or not responsible for his or her action, the ruling of the Judicial Hearing Board shall be binding. In cases where there is either a finding of responsibility or an admission of responsibility by the student, any recommendations by the hearing board regarding the course grade are non-binding on the instructor, who remains solely responsible for assigning a course grade, consistent with the policies set forth in the course syllabus.

## **Attendance**

The university does not use a "cut" system. Each instructor decides whether to excuse class absences and determines how to permit make-up work. If a student will be absent from classes for a week or more because of an accident, illness, or other emergency, instructors will be notified of the absence only if students or their parents request it through the Division of Student Affairs. Health Services will not release information about students unless they provide a written request.

Leaves of absence will be granted for volunteer services related to disaster relief in accordance with applicable Illinois statutes or executive orders issued by the State of Illinois in response to emergency situations. To initiate a leave of absence, students should contact their College Dean's office, or the vice provost (or the vice provost's delegate) for any student who has no college affiliation. Following the period of volunteer service, Registration and Records will facilitate reenrollment of the student.

Students are expected to comply with each individual instructor's established attendance policy. Students should avoid registering for classes in which they would amass significant absences. In the case of an absence due to required attendance at a university-sponsored event such as a department trip, performing arts activity, ROTC function, or athletic competition, reasonable attempts shall be made by faculty members to allow the student to make up missed work. Students are responsible for completing the work assigned and/or due on the days they are absent for university-sponsored events. Both the sponsoring unit and the student should inform the faculty member as soon as possible in the semester in order for arrangements to be made for completing missed assignments, examinations or other required course work. The student is required to provide each instructor with an official notification in advance of the absence (e.g., a letter from the chair of the sponsoring department, the head of the sponsoring unit, or the coach).

## **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. 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, (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 are encouraged to inform faculty of their requests for accommodations as early as possible in the semester, but must make the requests 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.

Students with disabilities can obtain a wide range of services, including housing, transportation, adaptation of printed materials, and advocacy with faculty and staff. Students with disabilities who need such services or want more information should contact the Disabilities Resource Center (4th floor of the University Health Services building) at 815-753-1303.