Fall 2015 - CHEMISTRY 210 (Honors Section H001)
Co-requisite: CHEM 212 - General Chemistry Laboratory I

Instructor–Lee Sunderlin, FW327, 753-6870, sunder@niu.edu
Office Hours –MWF 10:00 – 10:50 or by appointment.

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

Lecture and Recitation Schedule:
Lecture MWF, 2:00 PM, LaT 201 (also called Faraday West)
Recitation Wednesday, 3:00 PM LaT 201

Previous editions will also work if you can get separate access to the online software from McGraw Hill.

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. Most semesters it is staffed Monday through Thursday from 8:30 AM to 3:30 PM with a lunch break. On Fridays, the Tutor Room closes early (~2:30 PM). General Chemistry laboratory TA office hours are held in Faraday 247. The laboratory TA office hour schedule is posted outside the Tutor Room and at the departmental stockroom window. 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 - Dates for the three 100 point hour exams are indicated in the lecture schedule (see next page).
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 when the grade is calculated.
Recitation - The recitation grade will be based on four quizzes (10 points each, in recitation), homework assignments (4 points for each of chapters 1-10, chapter 11 not counted), and attendance (2 points for each of 10 recitation meetings where there is no quiz). Homework will be carried out online, as discussed below and in class. There will be no make-up quizzes.
Final Exam - The final examination will be divided into two parts: a 100 point section on the material from the last three weeks of class, and a 100 point comprehensive section. These two sections will be treated as separate scores for purposes of grading. The lowest score for the class will be dropped from the final score for the course. You may use an approved calculator but no other outside materials or devices on the test or quizzes. Any cheating on a quiz or exam can result in a zero for that quiz or exam.
Total points = 500 points (hour-long exams = 300; recitation = 100; two sections of final exam = 200, best five scores kept)
Grading scale: A ≥ 93%, A- ≥ 90%, B+ ≥ 87%, B ≥ 83%, B- ≥ 80%, C+ ≥ 77%, C ≥ 70%, D ≥ 60%, F < 60%

Accommodations for 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 Disabilities Resource Center to determine appropriate accommodations, and (3) inform the faculty in charge of the academic activity of the need for accommodation. Students are encouraged to inform the 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 Disabilities Resource Center 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 Disabilities Resource Center in this process, including but not limited to the Student Handbook.

A wide range of services can be obtained by students with disabilities, 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 at 815-753-1303.

### TENTATIVE LECTURE SCHEDULE

<table>
<thead>
<tr>
<th>WEEK</th>
<th>CHAPTER/TOPIC</th>
<th>Exam</th>
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<tbody>
<tr>
<td>1. Aug 24-28</td>
<td>1: Keys to the Study of Chemistry</td>
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<td>2. Aug 31-Sep 4</td>
<td>2: The Components of Matter</td>
<td>Quiz Sep 2</td>
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<tr>
<td>3. Sep 9-11</td>
<td>2: Continued / 3: Stoichiometry</td>
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<td>4. Sep 14-18</td>
<td>3: Continued</td>
<td>Exam I Sep 18</td>
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<td>5. Sep 21-25</td>
<td>4: Chemical Reactions</td>
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<td>6. Sep 28-Oct 2</td>
<td>5: Gases</td>
<td>Quiz Sep 30</td>
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<td>7. Oct 5-9</td>
<td>5: Continued / 6: Thermochemistry</td>
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<td>8. Oct 12-16</td>
<td>6: Continued</td>
<td>Exam II Oct 16</td>
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<tr>
<td>11. Nov 2-6</td>
<td>8: Continued / 9: Chemical Bonding</td>
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<td>13. Nov 16-20</td>
<td>10: Shapes of Molecules</td>
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<td>14. Nov 23</td>
<td>11: Covalent Bonding</td>
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<tr>
<td>15. Nov 30-Dec 4</td>
<td>11: Continued</td>
<td>Quiz Dec 2</td>
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<tr>
<td>16. Dec 7</td>
<td>Monday Dec 7  2-3:50 PM</td>
<td>FINAL</td>
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CHEMISTRY 210 - 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

○ Understand the components of atoms and ions
○ Learn how to write chemical formulas and how to name compounds
○ Learn how to balance chemical equations and how to perform simple stoichiometry calculations
○ Understand the behavior of gases, liquids, and solids
○ Become familiar with the electronic structure of atoms and understand how chemical reactivity depends on electronic structure
○ Correctly predict the shapes of complex molecules and ions, and become familiar with the theories of chemical bonding

The website for the online HW system (counted for class credit) is:


Make sure you sign up for the Fall 2015 class.

Optional homework for CHEM 210 from Silberberg text (not for class credit)

Chapter 1 Problems 1, 5, 14, 16, 18, 23, 25, 31, 46, 54, 59
Chapter 2 Problems 3, 4, 7, 12, 16, 24, 28, 32, 39, 43, 48, 54, 58, 60, 64, 68, 78
Chapter 3 Problems 1, 2, 7, 13, 17, 27, 29, 34, 37, 42, 44, 50, 58, 68, 72, 78
Chapter 4 Problems 2, 8, 12, 24, 26, 28, 40, 42, 50, 54, 58, 66, 74
Chapter 5 Problems 7, 15, 17, 31, 35, 42, 43, 47, 56
Chapter 6 Problems 5, 7, 13, 22, 24, 35, 37, 41, 44, 53, 55
Chapter 7 Problems 7, 9, 14, 19, 21, 35, 40, 42, 55
Chapter 8 Problems 5, 10, 12, 18, 20, 22, 30, 40, 42, 57, 61
Chapter 9 Problems 4, 6, 8, 10, 18, 30, 35, 36, 39, 45, 51
Chapter 10 Problems 1, 3, 5, 11, 13, 19, 24, 33, 37, 39, 54
Chapter 11 Problems 1, 7, 13, 21, 25, 29, 33, 35, 37