

**Spring 2016 - CHEMISTRY 211-0001**  
**Co-requisite:** CHEM 213 - General Chemistry Laboratory II

**Instructor** - Dr. Elizabeth R. Gaillard, LaT322, 753-6908, [gaillard@niu.edu](mailto:gaillard@niu.edu)

**Office Hours** – M 9:00-9:50, W 11:00-11:50 and Th 2:00-2:50 or by appointment

**Recitation TA** – TBA, **TA Office Hours** - TBA

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

**Textbook:** “*Principles of General Chemistry*”, by M. Silberberg 3<sup>rd</sup> Edition (McGraw Hill; 2013) and McGraw-Hill Connect (on-line assignments, LearnSmart adaptive learning and the electronic textbook). Connect includes an ebook and the Smartbook in LearnSmart that you are strongly encouraged to use. You are not required to purchase the hardbound copy of the textbook. An access code for Connect is bundled with the textbook or you may purchase one on-line the first time that you open an assignment on Blackboard. The University bookstore also sells Connect access codes. The Connect access code costs \$120 and is good for two semesters.

**Lecture and Recitation Schedule**

Section R001 Lecture MWF, 8:00 AM, FR 143 Recitation Tuesday, 11:00 AM FR 205

Section R002 Lecture MWF, 8:00 AM, FR 143 Recitation Tuesday, 12:30 AM FR 205

Section R003 Lecture MWF, 8:00 AM, FR 143 Recitation Tuesday, 2:00 PM FR 205

Section R004 Lecture MWF, 8:00 AM, FR 143 Recitation Tuesday, 3:30 PM FR 205

**Tutors and Lab TA Office Hours:** The Department of Chemistry and Biochemistry maintains a free tutor room, the Chemistry Help Room, for General Chemistry students. The Help Room is in **Faraday Hall 247** and the schedule will be posted online ([http://www.chembio.niu.edu/chembio/aboutus/help\\_room.shtml](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. General Chemistry laboratory TA office hours are held in Faraday 246. 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 three 100 point in-semester 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 to take the exam before the scheduled date and time. Professor Gaillard reserves the right to refuse to make alternative arrangements. A missed exam will count as the dropped exam.* 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.

**Recitation** - The recitation grade (100 points possible) will be based on the best 7 of 10 ten-point Connect assignments and attendance (30 points possible). The Connect assignments are administered on-line and will be available for 48 hours. They are designed to cover material on a per chapter basis and therefore will parallel the lecture schedule. The schedule of Connect assignments will be announced in class. Students are strongly encouraged to utilize the LearnSmart study modules in Connect as an additional learning tool. Two points of extra credit will be assigned for each completed LearnSmart module.

**Final Exam** - The 100 point final exam will be comprehensive and will be given on Monday, May 9th

from 8-9:50 am. In addition, Exam 4 which is worth 100 points will be administered at the time scheduled for the final 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.**

**Total points possible = 500 points** (exams = 300, recitation = 100, final exam = 100)

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

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 but this is not guaranteed. **There will not be a curve.**

**Academic integrity** - Good academic work must be based on honesty. Cheating and plagiarism are considered to be serious offenses. Students responsible for, or assisting others in, either cheating or plagiarism on an assignment, quiz, or examination may receive a grade of F for this course and may be suspended or dismissed from the university.

**Accommodations for students with disabilities** – If you need an accommodation for this class, please contact the Disability Resource Center as soon as possible. The DRC coordinates accommodations for students with disabilities. It is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1303 (V) or [drc@niu.edu](mailto:drc@niu.edu). You can access the Accessibility Portal here <http://www.niu.edu/accessibility/>.

Also, please contact me privately as soon as possible so we can discuss your accommodations. The sooner you let us know your needs, the sooner we can assist you in achieving your learning goals in this course.

### TENTATIVE LECTURE SCHEDULE

<u>WEEK</u>	<u>CHAPTER/TOPIC</u>	<u>Exam/Quiz</u>
1. Jan. 20-22	<b>12:</b> Liquids, Solids, and Phase Changes	
2. Jan. 25-29	<b>12:</b> Continued	
3. Feb. 1-5	<b>13:</b> Properties of Solutions	
4. Feb. 8-12	<b>13:</b> Continued / <b>16:</b> Kinetics	
5. Feb. 15-19	<b>16:</b> Continued	<b>Exam 1, 2/15</b>
6. Feb. 22-26	<b>17:</b> Equilibrium	
7. Feb. 29-Mar. 4	<b>17:</b> Continued	
8. Mar. 7-11	<b>18:</b> Acid Base Equilibria	
9. Mar. 14-18	<b>SPRING BREAK</b>	
10. Mar. 21-25	<b>18:</b> Continued / <b>19:</b> Ionic Equilibria in Aqueous Systems	
11. Mar. 28-Apr. 1	<b>19:</b> Continued / <b>20:</b> Thermodynamics	<b>Exam 2, 3/28</b>
12. Apr. 4-8	<b>20:</b> Continued	
13. Apr. 11-15	<b>20:</b> Continued / <b>21:</b> Electrochemistry	
14. Apr. 18-22	<b>21:</b> Continued	
15. Apr. 25-29	<b>23:</b> Nuclear Reactions	<b>Exam 3, 4/25</b>
16. May 2-4	<b>23:</b> Continued/ May 6 is reading day (no classes)	
<b>Final: May 9</b>	8 AM - 9:50AM	<b>Exam 4 and FINAL</b>

## 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/>

In the lecture hall and recitation classroom, common courtesy is expected. Don't engage in activities that interfere with my teaching (or the recitation 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.

## 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.