CHEMISTRY 110 (Spring 2012)
Section 2

Time & Place: Tu, Th 2:00 PM - 3:15 PM, Faraday Hall 143.
Textbook: Denniston, Topping and Caret, *General, Organic and Biochemistry*, McGraw-Hill, (seventh edition) © 2011.
Instructor: Dr. Chong Zheng, Office: La Tourette Hall 326, Phone: 753-6871, e-mail: *czheng@niu.edu*
Course webpage: http://webcourses.niu.edu/
Office hours: Tu, Th 12:30 P.M. - 1:30 P.M. or by appointment.

Lecture	Date	Tentative Topics	Reading
1	Jan. 17	Prologue: Introduction to the Scientific Method	Chapter 1
2	Jan. 19	Chemistry: Methods and Measurements	Chapter 1
3	Jan. 24	Chemistry: Methods and Measurements	Chapter 1
4	Jan. 26	The Structure of the Atom and the Periodic Table	Chapter 2
5	Jan. 31	The Structure of the Atom and the Periodic Table	Chapter 2
6	Feb. 2	The Structure of the Atom and the Periodic Table	Chapter 2
	Feb. 7	**EXAM 1 (Ch. 1-2, 100 pts): Tuesday, 2:00PM-3:15PM in classroom**	Ch. 1-2
7	Feb. 9	Structure and Properties of Ionic and Covalent Compounds	Chapter 3
8	Feb. 14	Structure and Properties of Ionic and Covalent Compounds	Chapter 3
9	Feb. 16	Structure and Properties of Ionic and Covalent Compounds	Chapter 3
10	Feb. 21	Calculations and the Chemical Equation	Chapter 4
11	Feb. 23	Calculations and the Chemical Equation	Chapter 4
	Feb. 28	**EXAM 2 (Ch. 3-4, 100 pts): Tuesday, 2:00PM-3:15PM in classroom**	Ch. 3-4
12	March 1	States of Matter: Gases, Liquids and Solids	Chapter 5
13	March 6	States of Matter: Gases, Liquids and Solids	Chapter 5
14	March 8	States of Matter: Gases, Liquids and Solids	Chapter 5
	March 11-18	**Spring Break**	
15	March 20	Solutions	Chapter 6
16	March 22	Solutions	Chapter 6
	March 27	**EXAM 3 (Ch. 5-6, 100 pts): Tuesday, 2:00PM-3:15PM in classroom**	Ch. 5-6
17	March 29	Energy, Rate and Equilibrium	Chapter 7
18	April 3	Energy, Rate and Equilibrium	Chapter 7
19	April 5	Energy, Rate and Equilibrium	Chapter 7
20	April 10	Acids and Bases and Oxidation-Reduction	Chapter 8
21	April 12	Acids and Bases and Oxidation-Reduction	Chapter 8
22	April 17	Acids and Bases and Oxidation-Reduction	Chapter 8
23	April 19	Acids and Bases and Oxidation-Reduction	Chapter 8
	April 24	**EXAM 4 (Ch. 7-8, 100 pts): Tuesday, 2:00PM-3:15PM in classroom**	Ch. 7-8
24	April 26	The Nucleus, Radioactivity and Nuclear Medicine	Chapter 9
25	May 1	The Nucleus, Radioactivity and Nuclear Medicine	Chapter 9
26	May 3	The Nucleus, Radioactivity and Nuclear Medicine	Chapter 9
	May 8	**FINAL EXAM (Comprehensive, 100 pts): Tuesday, 2:00PM-3:50PM in classroom**	Ch. 1-9

Grading:

1. There will be four exams based on chapter materials and a comprehensive final exam each worth 100 points. **No make up exams will be given** as one chapter exam or the class participation/home part (see below) will be dropped, whichever has the fewest points. The final exam will NOT be dropped as it measures your understanding of the whole class materials. All exams will be multiple choices and graded by scantron. Original scantron sheets will not be returned to you.

2. Total possible points for Chem 110: 400 (four chapter exams) + 100 (final exam) + 100 (web homework) = 600. When one chapter exam or the homework part is dropped (whichever is lowest), the maximum points are 500. The grades will be determined according to the percentage you finish out the total possible 500 points:

   90% or greater = A; 80-89% = B; 70-79% = C; 60-69% = D; and 59% or less = F

   There will be no curving. The effective curving is the class participation (see next page).

Web Homework:

The on-line homework is available at NIU Blackboard website http://webcourses.niu.edu/. To register: 1. Sign into Blackboard. 2. Go to Chemistry 110 Section 2. 3. Go to the "Tools" menu. 4. Click on the "McGraw-Hill Higher Education" link. 5. Below "My Connect Section", click Go to My Connect Section. 6. Follow the on-screen instructions to register using the access code found in your new textbook. There are two homework sets per chapter. The total points for the semester will be normalized to 100, equivalent to those of an exam. Although the homework is not mandatory, it is strongly recommended that you do it, as you can use the points (maximum 100) to substitute one chapter exam. In addition, there are many useful tools at the website (such as ebook) to help you understand the course materials.

The main purpose of the on-line homework is to strengthen your understanding of the course materials. You will not only earn these bonus points, but will also do better in the exams if you do the on-line problems while you are studying the related chapter. Thus the on-line homework of each chapter will only be available while the relevant chapter is being taught – during the period from start of the chapter to one week after the chapter is finished. If there is a computer or network related problem, the student should report it to the instructor and resolve it within a week. Under no circumstances a makeup of the on-line homework will be given, as it will otherwise defeat the purpose of the bonus homework.

Bonus class participation points:

The class uses the clicker system. You earn class participation points for each lecture if you answer all questions presented to you and get at least one correctly. Your total participation in the semester will be normalized to 50 bonus points. These points will be added to your (maximum 500) course points. With these bonus points, a student can usually move one letter grade up. For instruction how to use the clicker, please read the instruction: http://www.its.niu.edu/its/blackboard/clickers/turningpoint.shtml. Or log into Blackboard. Go to the "Tools" menu, click on the "TurningPoint Registration Tool" link, and follow the instruction there.

Calculators:

A calculator with scientific notation and logarithms should be brought to all exams.

Optional studying materials:

If you are unsure of your math background, the book *Math Survival Guide* by Jeffery R. Appling (John Wiley & Sons, Inc.), or *Basic Mathematics for Beginning Chemistry* by D. M. Goldish (Fourth edition, Macmillan, New York, © 1990) is recommended. Prentice Hall and Burns also publish a Math Toolkit tied directly into the text. You can find this by searching at www.prenhall.com.

There is also a "Student Study Guide" accompanying the textbook available, and many students will find it useful.

The web site accompanying the textbook provides tutorials, flashcards, reviews, PowerPoint presentation of the lectures and many other useful tools for learning. Just connect to http://www.chemplace.com/college for more information.

Other resources:

For further help, the Chemistry help room (Faraday Hall Room 246) is open 8:30-11:15 AM and 11:45 AM-3:30 PM, Mondays, Tuesdays and Thursdays. On Wednesdays, the room is open 8:30-11:50 AM and 1:00-3:30 PM. After 10 AM of the Wednesday in the finals week, the room will be closed. It is strongly recommended that you visit the help rooms at times other than right before an exam. Names of personal tutors are available from FR 319 (the department office). Students in CHEM 111 can also ask their TAs for assistance in understanding the lecture material.

The Supplemental Instruction (SI) program is available for those students who are interested. From our past experience, students who attend the SI session can usually improve their grades by one letter.

NIU abides by Section 504 of the Rehabilitation Act of 1973 regarding provision of reasonable accommodations for students with documented disabilities. Moreover, your academic success is of importance to me. If you have a disability that may have a negative impact on your performance in this course and you may require some type of instructional and/or examination accommodation, please contact me early in the semester so that I can provide or facilitate in providing accommodations you may need. If you have not already done so, you will need to register with the Center for Access-Ability Resources (CAAR), the designated office on campus to provide services and administer exams with accommodations for students with disabilities. CAAR is located on the 4th floor of the University Health Services building (753-1303). I look forward to talking with you to learn how I may be helpful in enhancing your academic success in this course.

General Education Course Objectives

- Improve ability to think critically and logically;
- Improve ability to reason quantitatively 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; and
- Develop an understanding of the historical development of the field of chemistry.

Content Objectives of This Course

- Understand the concepts of matter and energy and become acquainted with metric and SI units of measurement;
- Understand the electronic arrangement in atoms and the periodic properties of elements;
- Learn how to write chemical formulas, name compounds, and to perform simple chemical calculations;
- Familiarity with the behavior of gases, liquids, and solids;
- Become knowledgeable about the properties of aqueous solutions;
- Learn how to work safely in the chemistry laboratory (Chem 111 students only); and

- Learn how to manipulate scientific equipment and carry out simple laboratory experiments (Chem 111 students only).