

CHEMISTRY 100 (Fall 2011)
Chemistry in Everyday Life

Time & Place: Lectures, Tue in Faraday Hall 143, 9.30 – 10.45 a.m. Online work instead of Thur lecture.
Textbook: Chemistry in Context, 7th Edition, 2012, Middlecamp et al., McGraw-Hill, Connect Code req-d.
Instructor: Dr. Victor Ryzhov, Office: Faraday West (now LaTourette Hall) 425, Phone: 753-6955,
e-mail: ryzhov@niu.edu
Office hours: W, Th 9:30 A.M. - 10:30 A.M., or by appointment, e-mail any time.
Course website: <http://webcourses.niu.edu> (Blackboard)

Course structure and grading:

There will be three exams worth 100 points each. There will be twelve (one per chapter) on-line homeworks worth total of 120 pts and twelve (one per chapter) multiple-choice quizzes totaling 60 pts. They will be administered via Blackboard/Connect. There will be up to 80 pts assigned for the on-line discussion board. Each student will have to participate in four of those (initiating discussion topics and posting comments/replies to the existing threads). The overall course grading will be as follows:

Out of 560 pts: > 90% = A; 81-90% = B; 71-80% = C; 61-70% = D; < 60% = F

This scale may be revised downward (not upward), but this is not guaranteed. **Under no circumstances will a student pass the course (a grade of D) with an average of less than 50%.**

| Topic begins | Tentative Topics | HW, Quiz and Forum Due (9.30 am CT) | Reading |
|--------------|--|-------------------------------------|-----------------|
| 8/23 | Chemistry for a Sustainable Future | | Chapter 0 |
| 8/30 | The Air We Breathe | 9/6 | Chapter 1 |
| 9/6 | Protecting the Ozone Layer | 9/13 | Chapter 2 |
| 9/13 | The Chemistry of Global Climate Change | 9/20 | Chapter 3 |
| 9/20 | Energy from Combustion | 9/27 | Chapter 4 |
| 9/27 | EXAM 1 (Ch. 1-4, 100 pts) | | Ch. 1-4 |
| 10/4 | Water for Life | 10/11 | Chapter 5 |
| 10/11 | Neutralizing the Threat of Acid Rain | 10/18 | Chapter 6 |
| 10/18 | The Fires of Nuclear Fission | 10/25 | Chapter 7 |
| 10/25 | Energy from Electron Transfer | 11/1 | Chapter 8 |
| 11/1 | EXAM 2 (Ch. 5-8, 100 pts) | | Ch. 5-8 |
| 11/8 | The World of Plastics and Polymers | 11/15 | Chapter 9 |
| 11/15 | Manipulating Molecules and Designing Drugs | 11/22 | Chapter 10 |
| 11/22 | Nutrition: Food for Thought | 11/29 | Chapter 11 |
| 11/29 | Genetic Engineering and the Molecules of Life | 12/6 | Chapter 12 |
| 12/8 (Th) | EXAM 3 (Ch. 9-12, 100 pts) – during Finals week | | Ch. 9-12 |

Exams:

There are three hourly exams scheduled for 9/27, 11/1 at the normal class time and 12/8 (Thur during finals week) at **10 a.m.** (note time change). If you are unable to make it to NIU on that day, make arrangements with me PRIOR to the exam. No make-up exams will be given after the test date. All exams will be multiple-choice and graded by Scantron.

Online quizzes:

There is one HW and quiz per each chapter, administered via Blackboard/Connect. Each HW consists of 10 conceptual, multi-step, or algorithmic questions with hints and feedback. The total for each HW is 10 pts max, with 120 pts available for all semester. Each HW can be attempted three times with no penalty. Each quiz has 10 multiple-choice questions worth a total of 5 pts per quiz. You have two attempts at the quiz; the second attempt will carry a 20% penalty. The total for all 12 quizzes is 60 pts max. The deadline is the date indicated in the Table above at 9.30 a.m. CT. The late penalty is 20% for each day.

Discussion Forum:

About fifteen percent of your grade (up to 80 pts total) will be based upon your postings to the discussion groups. For four out of twelve chapters you will be expected to initiate a post and then respond to at least two of your classmates' posts. If your last name starts with A-H, you will be participating in the forums for chapters 1, 4, 7, and 10. If your last name starts with J-M, you will be participating in the forums for chapters 2, 5, 8, and 11. If your last name starts with N-Z, you will be participating in the forums for chapters 3, 6, 9, and 12. First, make your post to the appropriate chapter (half of the credit for each chapter). Your post (at least ten sentences long) will serve as evidence that you have read the book, studied the web

resources, and worked on it. After that, examine other students' submissions and respond (via reply, at least five sentences long) to two or more of them (the other half of the credit for each chapter).

I will be monitoring the discussions, reading all the submissions and responses, evaluating them, informing you from time to time of those evaluations, and occasionally making helpful suggestions for improving submissions and, if necessary, correcting errors. More detailed instructions will be posted on the Blackboard. The discussion forum is graded on participation (not on content), but posts/replies that fail to meet the course standards (length, appropriateness of topic, respect for other classmates' viewpoints) may receive zero points.

Textbook and Connect Code:

Textbook is required for successful completion of the class. You may attempt to go through the class without it (lecture powerpoints provide about 80% of information) but it is not recommended. Sharing a textbook between two or more people is possible. The text is Chemistry in Context, 7th Edition, 2012, Middlecamp et al., McGraw-Hill, ISBN 978-0-07-337566-3. You can purchase it or rent it together with the Connect Code from NIU bookstore. Alternatively, you can buy an e-book and Connect Code (the bundle is called Connect Plus) from the publisher directly, ISBN 978-0-07-7334437. Or you can purchase the Connect Code from the publisher (when you access Blackboard HW or quiz) and the book elsewhere.

Office Hours:

Wed, Thurs. 9:30 A.M. - 10:30 A.M. During these times you can find me in my office (LT425). You are welcome to come by for help during office hours without an appointment. If you are unable to come during these times, you can make an appointment with me for another time that is convenient for both of us. You are also encouraged to contact me by e-mail and by phone during normal business hours.

Other resources:

The course website (<http://webcourses.niu.edu>) will feature important announcements, suggested discussion topics, practice exams, current exams and keys, and lecture powerpoint slides for downloading. Check the site periodically. You will need your student Z-ID to log in.

For further help, names of personal tutors are available from Linda Davis in FR 319 (the department office).

Your success as a student is of utmost importance to me. If you have a disability or any other special circumstance that may have some impact on your work in this class, and for which you may require exam and/or other types of accommodations, please contact me as soon as possible so that appropriate accommodations can be made. Please feel free to contact me by phone or to schedule an appointment.

The NIU Center for Access-Ability Resources (CAAR, 753-1303), located on the fourth floor of the University Health Service, is the designated office on campus to provide services and accommodations to all students with diagnosed disabilities. You will need to provide documentation of your disability to this office.

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;
- Develop an understanding of the historical development of the field of chemistry.

Content Objectives of This Course

- Distinguish between chemical, physical, and nuclear processes and properties of matter;
- Understand the acid/base properties of chemical compounds and the role of acids/bases in industrial, environmental, and health/nutritional applications;
- Identify the advantages and disadvantages of alternative energy sources vs. fossil fuels;
- Understand the role of chemistry in health care, pharmaceuticals, and nutrition;
- Become knowledgeable about the application of modern materials.