Lecture: Tues-Thurs, 9:30–10:45 am; Murray Hall, room G202

Professor: Kevin Weeks
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Course Goal: The goal of this course is to equip all students with a strong understanding of the principles that govern the structure and properties of chemical materials, including intermolecular forces, kinetics, thermodynamics and equilibria. Where possible, the course emphasizes examples that show how chemical principles govern our immediate environment and biological systems.

Office Hours: Wednesdays and Thursdays 4–5:15 pm, in the Genome Sciences Building, room 1378.

Resource center: Extensive and high quality assistance by trained teaching assistants, Monday-Thursday, 2–7 pm, in Kenan Labs C143.

Office hours start the week of January 14.

Prerequisite: A grade of C– or better in Chem 101. It is an Honor Code violation to be enrolled in this course without completing this prerequisite.


Solutions manual for red problems (recommended).

Basic scientific calculator (if it has √x, ln and e^x buttons, you will be fine). Cell phones may not be used as calculators.

Class Website: Sakai (sakai.unc.edu) will be used to make announcements, provide all course materials, and communicate grades earned.

Being Successful: Chemistry is an important, elegant and challenging subject. Chemistry is often called the "central science" because it links atoms and molecules to the macroscopic worlds of materials, technology, biology and medicine.

For most students, challenging, quantitative subjects like chemistry are best mastered using the see it three times approach. The basic idea is that you need to focus on new ideas on at least three separate instances in order to really get it. I recommend that these three times are: (1) read the chapter prior to class so you are familiar with the new ideas and terminology ahead of time; (2) be an active and engaged learner during class time; and (3) review the material at least once following class. You will do better if you do most of your studying by yourself, ask questions
early, and work the suggested homework problems completely before looking at the answers in the back of the textbook or answer keys.

Enjoy the class: attitude is a significant component of achievement!

**Class Department:** Students are expected to be respectful of our class. Reading newspapers or allowing your cell phone to go off during class are not allowed. The class has a no electronics policy (with the exception of calculators). Cell phones, laptops and i-thingies may not be used during class.

**Hour Exams:**
1. Tuesday, February 12
2. Thursday, March 21
3. Thursday, April 18

**Final Exam:**
Tuesday, May 7; 8-11 am; Murray G202. The final is cumulative.

No changes to this date, time or location are possible. If you have a conflict with this date, you should enroll in a different Chem 102 section.

**Evaluation:** Hour exams 20% each; final exam 40%.

I want to grade your best effort. If your final exam score is better than any of your hourly exams, then I will replace your lowest hour exam score with your final exam score.

If, for any personal or medical reason, you need to miss an hourly exam, then your final exam score will replace the missed hour exam score. Missing a second hour exam will result in a score of zero for that exam. If you miss the final exam, you must have a dean's excuse; the alternate final exam given in this case is harder than the one given at the correct time. If you think a mistake was made in grading an exam, you may write out a brief description explaining why a correction is merited; frivolous requests for regrades result in a deduction to the exam score.

**Grading:** Final letter grades are assigned in accordance with UNC Academic Policies (http://registrar.unc.edu/academic-services/grades/):

**A** – Mastery of course content at the highest level of attainment that can reasonably be expected of students at a given stage of development. The A grade states clearly that the students have shown such outstanding promise in the aspect of the discipline under study that he/she may be strongly encouraged to continue.

**B** – Strong performance demonstrating a high level of attainment for a student at a given stage of development. The B grade states that the student has shown solid promise in the aspect of the discipline under study.

**C** – A totally acceptable performance demonstrating an adequate level of attainment for a student at a given stage of development. The C grade states that, while not yet showing unusual promise, the student may continue to study in the discipline with reasonable hope of intellectual development.

**D** – A marginal performance in the required exercises demonstrating a minimal passing level of attainment. A student has given no evidence of prospective growth in the
discipline; an accumulation of D grades should be taken to mean that the student would be well advised not to continue in the academic field.

F – For whatever reason, an unacceptable performance. The F grade indicates that the student’s performance in the required exercises has revealed almost no understanding of the course content.

The final grading scale will be defined to reflect these assessments.

For >1,000 students taught, grades in this course have been (in percent): A, 9.9; A–, 8.7; B+, 7.3; B, 10.5; B–, 10.5; C+, 19.2; C+, 18.5; C–, 5.9; D, 6.4; F, 3.2.

**Homework:** Homework problems will be assigned but not collected or graded. Suggested homework problems reflect a mixture of relatively straightforward problems that test your understanding of basic principles covered in class, plus more challenging problems that test your ability to integrate information from several areas. Both kinds of problems appear on the exams.

**Honor Code:** Since all graded work (hourly and final exams) is be used in the determination of academic progress, no collaboration on this work is permitted. Use of a pre-programmed calculator, cell phone, or PDA during an exam is also prohibited.

There are many opportunities to collaborate otherwise. Please do so!
Approximate Course Schedule

Chapter 10: Gases
Chapter 11: Liquids and Intermolecular Forces
Chapter 13: Properties of Solutions

**Exam 1** (Chapters 10, 11, 13)  
Tuesday, February 12

Chapter 14: Chemical Kinetics
Chapter 15: Chemical Equilibrium
Chapter 16: Acid-Base Equilibria

**Exam 2** (Chapters 14, 15, 16)  
Thursday, March 21

Chapter 17: Additional Aspects of Aqueous Equilibria
Chapter 19: Chemical Thermodynamics

**Exam 3** (Chapters 17, 19)  
Thursday, April 18

Chapter 20: Electrochemistry

**Final Exam** (Cumulative)  
Tuesday, May 7