

CH141 Fall 2013: Syllabus and Course Information

Section A

Instructor: Whitney King
Office: Keyes 211
Tel: x5755; Text 207-649-9674
e-mail: dwking@colby.edu
Office hours: MF 10:00-11:00
(or drop by any time)

Section B

Instructor: Tom Shattuck
Office: Keyes 213
Tel: x5759
e-mail: twshattu@colby.edu
Office hours: W 11-12 & TT 10-11
(or drop by any time)

Course webpage: <http://colby.edu/chemistry/CH141/CH141.html>

Lecture Times and Locations:

Section A M-W-F — 9:00-9:50 in Keyes 105

Section B M-W-F — 10:00-10:50 in Keyes 105

Laboratory Location: Keyes 405

Required course materials:

- **Textbook:** Chemistry, The Central Science, 12th Edition, Brown, *et. al.* (ebook is fine)
- **Homework:** “Mastering Chemistry” access code (masteringchemistry.com)
- **Lab:** Bound laboratory notebook
- **Calculator:** Casio FX260solar

Course objectives and learning goals:

1. For students to gain an understanding of chemistry that supports their broad interests in science, computer science, environmental science, neuroscience, biology, geology and physics. The course also prepares students for Organic Chemistry and other advanced chemistry courses.
 - a. To learn to communicate using the nomenclature used by chemists.
 - b. To understand the basic structure of the atom and its subatomic particles.
 - c. To learn the basic principles of mass balance.
 - d. To understand the nature of the chemical bond.
 - e. To understand how chemical reactivity regulates the world in which we live.
2. For students to sharpen their quantitative skills in a scientific context.
3. For students to improve skills in solving problems that involve the integration and synthesis of new knowledge and to master the interface between narrative and mathematical problem solving.
4. For students to think critically through their analyses of experimental data.

Perseverance will be an important key to success. Stay involved and up-to-date on the homework.

Grading:

- **Exam 1 (12%)** – Monday, September 30 from 5:00-7:00 PM in Keyes 105.
- **Exam 2 (12%)** – Thursday, October 24 from 5:00-7:00 PM in Keyes 105.
- **Exam 3 (12%)** – Thursday, November 21 from 5:00-7:00 PM in Keyes 105.
- **Final Exam (24%)** – Cumulative (date, time, and room to be assigned by registrar)
- **Laboratory (28%)** – Attendance is mandatory. You must have a passing grade in lab to pass CH141. For more information on the Laboratory, please visit the CH141 webpage.
- **Homework (12%)** – See below for more information.

Anticipated course topics and approximate schedule:

Week	Chapter	General topic
1: Sept. 4	1	Introduction: Matter and Measurement
2: Sept. 9	2	Atoms, Molecules, and Ions
3: Sept. 16	3	Stoichiometry
4: Sept. 23	4	Reactions in Aqueous Solution
5: Sept. 30	5	Thermochemistry
6: Oct. 7	6	Electronic Structure of Atoms
7: (fall break) Oct. 16	6	Electronic Structure of Atoms
8: Oct. 21	7	Periodic Properties of the Elements
9: Oct. 28	8	Basic Concepts of Chemical Bonding
10: Nov. 4	9	Molecular Geometry and
11: Nov. 11	9	Bonding Theories
12: Nov. 18	10	Gases
13: Nov. 25 (Thanksgiving)	11	Liquids and Intermolecular Forces
14: Dec. 2	13	Properties of Solutions

Course and Departmental policies, including Academic Dishonesty:**1. Student collaboration**

We strongly encourage students to work together in preparing for class and laboratory. Small group discussions are very useful in generating ideas that aid in problem solving and stimulate learning. Problem solving is an important part of chemistry and often it is the best way to learn material in chemistry courses. You are encouraged to work together on practice problems from the text. On individual work that is used for course or laboratory grading, however, any assistance that you give or receive from another student must be limited to correcting errors in the data as recorded in the laboratory. It is not appropriate to give your work, including spreadsheets, to another student for copying or comparison. Your course instructors are always eager to help – please ask us!

All material that you submit for a grade must be the result of your own thoughts and work. Graded work includes exams, quizzes, lab reports, and on-line homework. Lab reports and graded homework are just as important with regards to academic dishonesty as tests. Science advances through the honest and careful reporting of laboratory work. Note that this policy

includes both calculations and answers to questions in laboratory write-ups. In lab, your collaboration ends with collection of data.

Academic dishonesty can take many forms including, but not necessarily limited to:

- Looking at or copying material from another student's work, or allowing another student to copy any of your work.
- Using any sources or materials during an exam that are not expressly allowed by the instructor, creating such materials and leaving them in a location where they might be used by you or another student (all such materials should not be brought to the exam; they may not be on the floor, hidden in your exam, written on your hand, programmed into an electronic device, left in the bathroom, halls, or surrounding area, etc.).
- Altering your exam in any way after it is returned when asking for regrading of a portion of an exam.

These policies are consistent with both the College's policy on academic honesty as discussed in the Student Handbook as well as the Chemistry Department's policy at:

http://www.colby.edu/chemistry/Attend_Exam.html

2. Extra help

Please see Professor King or Shattuck as soon as possible if you have any questions about course or lab material. Help is also available at the Chemistry Help Center, staffed by experienced and knowledgeable chemistry majors, which is open four evenings per week in Keyes 104 (M-Th, 7:30-9:30pm). These students will be happy to answer questions and help with problems. If you feel the need for further help (i.e. after you've met with your Professor and tried using the Chemistry Help Center), tutors are available – see Lisa Miller (Keyes 310; lmmiller@colby.edu) to make arrangements.

3. Exams

There will be three one-hour exams this semester outside of class time (see dates above) and a final exam during the exam period. To allow for universal access, all students may take up to two hours to complete the one-hour exams. Exam questions may come from lecture, lab, the text, and/or homework and will be a mix of multiple choice, mathematical problems, and short answers. Please note that you must show your work on arithmetical problems for credit and partial credit.

Students are required to take all exams, and there are **NO MAKE-UP EXAMS**. If a student expects to be away for an official College activity, we will arrange for exams to be administered by a coach or other non-student person that accompanies the student. It is the responsibility of the student to let your professor know, **well in advance**, of any possible trips and to arrange with a person (for example, your coach) to administer the exam.

You must have your advising Dean contact your course instructor if you want to be excused from an exam for a medical or family emergency. You must authorize the Health Center to report your illness to your advising Dean. The grade for an unexcused missed exam is zero. The grade for an exam missed due to an excused absence will be calculated based on your three remaining unadjusted exam grades, normalized by the class average. Students with documented

learning differences should follow college policy to arrange for accommodations during the first two weeks of the semester.

Important note: To encourage students to perform to the best of their abilities and to work towards improvement, all hour exams will be adjusted based on future test scores. All hour-exam grades will be adjusted upwards by replacing the exam score with the average of that exam grade and the subsequent unadjusted exam grade (the final exam will be used to adjust the third exam grade). Note that this recalculation is automatic, and will only be applied if it improves your grade.

4. Homework assignments

The homework portion of your grade will be derived from an online homework application, "Mastering Chemistry." You must purchase an access code from the bookstore (bundled with new textbooks) or online (directly through the homework website) and set up an account at www.masteringchemistry.com according to the instructions that you can download from the CH141 website. There will be graded online homework problems due at the beginning of each class. For each assignment, be sure to view the grading details. These assigned problems will predominantly involve quantitative problem solving. To compensate for on-line access issues, forgetfulness, busy student schedules, and electronic dogs that may eat your homework, we will automatically drop the four worst homework grades.

In addition, optional practice problems will be assigned from the back of the textbook chapter and online through Mastering Chemistry. Work through as many of these problems as necessary to make sure you have a good grasp of the material. *The key indicator of success in this course is the ability to work through problems without depending on an answer key or on the online 'hint' feature.*

5. Electronic Devices

Electronic Devices, such as laptop computers, cell phones, and tablets can be useful educational tools to facilitate learning. However, used inappropriately, electronic devices can be a significant distraction to other members of your class. We request that students be respectful of the instructor when using electronic devices during lecture or lab.