

**Chemistry 1110 – Elementary Chemistry I
Fall 2013**

Instructor: Brock Casselman
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Office hours: Open-Door Policy, or By-Appointment

Monday 1:00 pm-2:00 pm
Tuesday 9:30-10:30 am
Wednesday 11:00 am-12:00 pm

Teaching Assistants:

Trevor Feagin	Tfeagin@chem.utah.edu	Sections 2,4
Alex Rangel	arangel@chem.utah.edu	Sections 3,5
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Materials:

General, Organic, and Biochemistry, 2nd ed, by Smith (McGraw Hill, 2011).

Print ISBN-10: 0073402788

e-Book: The e-Book can be purchased as part of your Connect registration

Chemistry 1110 Laboratory Manual. Available Online on Canvas

Canvas: The URL instructure.utah.edu gets you to our course website. Simply login with your UNID and password, and select CHEM 1110-001. The site is one-stop shopping for our course, featuring lab information, discussion pages, slides of presentations, and a record of your grades.

TurningPoint clicker (student response device), available at the campus bookstore. Alternatively, Wi-Fi enabled phones, laptops, and tablets can be used for clickers in this course. We will use these almost daily in class beginning *Wednesday, August 28*. If you have purchased a TurningPoint clicker for a different course, you *should* be able to use it for this one. See me with any questions. Register your clicker for this course by following the instructions in Canvas under the 'Registration Links' page

Connect, an online homework system created by the publisher of our textbook. We will use this site for homework assignments. Register for this system via the link from the course website by following the instructions in Canvas under the 'Registration Links' page. During registration, an eBook may be purchased by following the appropriate instructions.

Lab: The following materials are required for lab:

Goggles: may be purchased at the bookstore

Pants and Close-Toed Shoes worn in every lab

Combination Lock (one for each set of partners): may be purchased at the bookstore

Lab Binder: all lab instructions, etc can be found on Canvas in the 'Lab Information' page

Paper Towels, Dish Soap, Kitchen Matches

SUPPLEMENTAL INSTRUCTION

The Supplemental Instruction Program, called SI for short, is offered in this course to provide organized study sessions. These sessions are free and open to all students in the course and are led by an undergraduate who has done well in this subject area. Your SI leader will be attending classes, reading the material, and doing any relevant assignments to be prepared for the SI sessions. The purpose of SI is to see that each of you has the opportunity to do as well as you would like to in this course. **In SI sessions, we will review, organize, and clarify the material from lectures; teach you ways to develop effective study skills for this course; and help you prepare for exams.** Your SI leader will schedule 3 meetings per week convenient to the majority of your schedules. Attendance is voluntary, and you may attend as many or as few sessions as you like.

Once the days, times and locations of the sessions are announced, you can enter this information on this chart.

Session 1	Session 2	Session 3

At the end of the semester, please complete the **post-survey** accessed at www.studentvoice.com/utah/si.html to provide us with feedback on your experience with SI. Your comments are valued and important to our ability to provide you with effective SI sessions that meet your needs. Let us know what worked well and what you would change!

SI Leader: Caleigh Oliver: Caleigh.oliver@utah.edu

Click on the 'Supplemental Instruction' link on Canvas for more information

Introduction: The two-semester Elementary Chemistry course, CHEM 1110 and 1120, is intended as a broad introduction to chemistry primarily for students planning a career in the allied health fields. Chemistry 1110 consists of an introduction to general chemistry with an emphasis on the language of chemistry, quantitative problem solving, and visualizing atoms and molecules. Chemistry 1120 (offered Spring and Summer semesters) introduces organic chemistry and concludes with an introduction to biochemistry.

Prerequisites: Intermediate Algebra (Math 1010) is a prerequisite for this course, but more generally, competence in arithmetic and simple algebra is a prerequisite.

Objectives: Your main goal in this course is to gain familiarity with basic chemical principles, especially as they relate to biological systems. The knowledge you gain in this course will serve as a basis for understanding topics in biochemistry, physiology, and pharmacology, subjects that all allied health professionals study at some point.

Course content: We will study Chapters 1-10 from the text. Any excluded sections from these chapters will be announced. Otherwise, you are responsible for *everything*, and you are also responsible for everything mentioned in lecture, whether that material is covered by The Book or not.

Course components: There is a lot to this course: lab, homework, discussion, lecture, and tests. The work load can become overwhelming, especially if left to the last minute. If, however, you dedicate about 30 minutes every day of out-of-class work, you will be able to be successful without having too great of a workload.

Lecture format and clickers. Here is surefire way help you become successful in class

- 1) Download and print off the slides, posted on Canvas, for the upcoming lectures
- 2) While in class, take notes on the material covered. Include the following:
 - a. Things written on the slides
 - b. Things stated by the instructor
 - c. Questions about the content you may have (you can ask these or look for them in your book)
 - d. Calculations for problems completed in class
- 3) Complete the clicker questions
 - a. Several times during each lecture, clicker questions will be asked. You will be awarded points for your participation on these questions
- 4) If you don't know, ask!

Clicker Questions represent 5% of your total grade. A correct response will yield one point per question, an incorrect response will yield 0.75 points per question. If you have forgotten your clicker, you will not be able to receive points for that day: sorry.

Connect. The best way to learn chemistry is to work lots of problems. The *Connect* platform facilitates immediate feedback on your work, so can know right away whether you are working the problems *correctly*. You will have a *Connect* assignment due approximately each week, and ALL scores will count toward your grade. You can work each numerical problem up to 5 times, and if, on the 5th attempt (or earlier), you get the correct answer, you get full credit for that problem. Asking your TA questions about the *Connect* problems during discussion is encouraged, but don't expect the TA to solve the problem for you. Be prepared to show that you already have done some work, and be ready to do some more after your TA gives you some hints.

Learn Smart Modules: These are a branch of the Connect homework system. They are designed to help you review the material before it is covered in class. These will help you to know which topics you know, and those you don't, to focus in your study efforts. The following outline will help you implement these successfully: 1) Read the chapter, 2) Answer the questions in the LearnSmart Module without the book, 3) Answer the remaining questions in the module with the book, 4) Take note of the topics you most struggle with and bring your questions about these to class.

Connect homework and Learn Smart Modules together represent 10% of your total grade.

Discussion: Beginning the third week of class (the week of September 9th), you will have discussion sections with your TA. As TA's are responsible for the grading of the worksheets completed in the discussion, you must attend your selected discussion section. If this is a problem, come and see me. Discussions will consist of three parts. First, a worksheet will be completed teaching you the strategies to solve the more complex problems encountered. These will be given a participation grade and will be turned in at the end of discussion. Second, time will be provided to complete the prelab for the upcoming lab. Some require that you come up with your own lab procedure: pass this off with your TA during discussion. Finally, the remaining time open time to work on homework, practice book problems, post-labs, etc. Use this time, ask your TA for help, and work together, and it will be immensely valuable!

Discussion Participation represents 10% of your total grade

Laboratory. This semester, you will do ten ‘wet’ (in lab) experiments and two computer-based experiments. All material for these experiments is found in the ‘Lab Information’ section on canvas. See the lab schedule on page 6 of this syllabus for a list of the dates of each lab. Most of the experiments contain pre-lab questions which you are required to complete before the lab experiment begins. In the last several pre-labs, you are creating your own procedure to use in the lab, so it is vital to complete these before coming lab. Time will be given during discussion to complete these. At the end of discussion or the beginning of lab, your TA will check these. These must be checked before doing the experiment.

The lab manual is written such that you can fill in your experimental data and complete most calculations within the pages for a given experiment. The lab report is due the following week at the beginning of lab. Lab participation represents 15% of your total grade. You will be able to drop ONE lab and have ONE makeup lab. All makeup labs must be done within the week of the lab. To do so, you will attend another lab section of this course. You must have permission from your TA and the TA over the section you are making up the lab in. Make sure you turn in your previous week’s lab to YOUR TA.

Required Lab Attire: Close-Toed Shoes, Goggles, and Pants. The laboratory can be a dangerous place, especially if you are not dressed appropriately. Acid burns on bare legs and feet are painful and can scar permanently, and Bunsen burners can ruin otherwise good hairstyles. *If you are dressed inappropriately for lab, you will not be allowed to do the experiment or to make it up.* Be responsible, plan, and don’t let yourself be turned away at the door. If you wish, a pair of shoes, scrubs, or sweat pants can be stored in your drawer for the lab.

Finally, some of you have attended this class previously, have attended Chem 1215, or took lab as part of an AP chemistry course. I have gone through and made fairly considerable changes to the labs, including adding two labs, removing one lab, and changing much of the format of the remaining labs. I have also worked hard to ensure that the material covered in lab complements greatly the topics covered in lecture (almost all fall within the same week that the concept covered is taught in lecture). Finally, tests will draw from material covered in lecture, discussion, homework, and labs. This being said, if you fall in the above three categories, to option to not take the lab is open to you. If you wish not to take labs, I will have you sign a form the first week of class stating you do not wish to retake the labs. In order to do so, I will need some form (a class schedule, course grade, etc) that demonstrates that you took the course previously. Lab makes up 15% of the total grade, and those wishing not to retake lab will have their grade determined exclusively from their performance on the remaining 85% of the course (tests, clickers, discussion, and homework). Alternatively, a previous 1215 lab grade can count for the course lab grade.

Labs, including pre- and post-labs represent 15% of your final grade.

Midterm Exams. My exams are designed to find out what *you* know about chemistry independent of your book, the Internet, and your classmates. For each exam, you get to use a non-programmable scientific calculator (i.e. one with scientific notation, logarithms, and antilogarithms). Nothing else (e.g. cell phones, PDA’s, laptops, electronic translators, whatever) will be permitted. You also will get a reference sheet containing constants and equations; this reference sheet will be made available to view you before each exam, so you’ll know ahead of time what will be on it. This will be the last page copied of each test, and no notes may be brought in outside of class. Exam dates are listed below. No make-up or early exams will be given. Midterms will be returned in discussion by your TA and will be available for two weeks. After this period, leftover midterms will be fed to the recycle bin. Any dispute over the grading of an exam must be brought to the attention of the professor within 15 days after the exams are returned to the class.

Final Exam. The final exam will be given on Wednesday, December 18th, from 8-10 am in accordance with the University's final exam schedule. There is no opportunity for an early or late final except in the case of a University-sanctioned absence or a certifiable emergency. The final exam is comprehensive.

Each midterm represents 10% of your total grade. The final represents 20% of your final grade.

Grading: Below is the percent contribution of each component to your total score:

Laboratory	15	Midterm 2	10
Clicker questions	5	Midterm 3	10
<i>Connect</i>	10	Midterm 4	10
Discussion	10	Final Exam	20
Midterm 1	10		

If you have taken the course before and are not repeating the lab experiments, your total grade will be calculated from the remaining 85% of the course (clickers, homework, discussion, and exams)

Grade assignments will be roughly as follows:

A/A-	90+
B+/B/B-	75-89.99
C+/C/C-	60-74.99
D	50-59.99
E	< 50

Academic Integrity. Incidents of academic dishonesty will not be tolerated. Per Section V of Policy 6-400, the Student Code, anyone caught cheating in any capacity, which means any representation of unoriginal work as her or his own, will receive, in proportion to the severity of the incident, a 0 on an assignment, a 0 for a grading category (such as clicker points), a 0 on an exam, or an E in the course, and the incident will be referred to the dean of the student's major-department college. With regard to clicker questions, you must respond with your own clicker and no one else's. Any instance of someone using more than clicker one will be treated as a case of academic dishonesty, and all parties involved will be sanctioned.

Calculators. For your exams and discussion problems, you will need a non-programmable scientific calculator (i.e. one with scientific notation, logarithms, and antilogarithms). Nothing else (e.g. cell phones, PDA's, laptops, electronic translators, whatever) will be permitted.

CDS. The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

At the end of the semester, please complete the **post-survey** accessed at www.studentvoice.com/utah/si.html to provide us with feedback on your experience with SI. Your comments are valued and important to our ability to provide you with effective SI sessions that meet your needs. Let us know what worked well and what you would change!

Approximate Lecture Schedule

26-Aug	Introduction, logistics, and Ch. 1	23-Oct	Ch. 5
28-Aug	Ch. 1: Chemistry: Matter and Measurement	25-Oct	Ch. 5
30-Aug	Ch. 2: Atoms and the Periodic Table	28-Oct	Ch. 5, Ch 6: Energy Changes, Reaction Rates, Equilibrium
2-Sep	Labor Day: No School!	30-Oct	Ch. 6
4-Sep	Ch. 2	1-Nov	Ch. 6
6-Sep	Ch. 2	4-Nov	Ch. 6: Last material on Midterm 3
9-Sep	Ch. 2, Ch. 3: Ionic Compounds	6-Nov	Midterm 3 Review
11-Sep	Ch. 3	8-Nov	Midterm 3
13-Sep	Ch. 3	11-Nov	Ch. 8: Solutions
16-Sep	Ch. 3: Last Material on Midterm 1	13-Nov	Ch. 8
18-Sep	Midterm 1 Review	15-Nov	Ch. 8
20-Sep	Midterm 1	18-Nov	Ch. 8
23-Sep	Ch. 4: Covalent Compounds	20-Nov	Ch. 9: Acids and Bases
24-Sep	Ch. 4	22-Nov	Ch. 9
27-Sep	Ch. 4	25-Nov	Ch. 9
30-Sep	Ch. 7: Gases, Liquids, and Solids	27-Nov	Ch. 9
2-Oct	Ch. 7	29-Nov	Thanksgiving Break: No School!
4-Oct	Ch. 7	2-Dec	Ch. 9: Last material on Midterm 4
7-Oct	Ch. 7: Last material on Midterm 2	4-Dec	Midterm 4 Review
9-Oct	Midterm 2 Review	6-Dec	Midterm 4
11-Oct	Midterm 2	9-Dec	Ch. 10
14-Oct	Fall Break: No School!	11-Dec	Ch. 10
16-Oct	Fall Break: No School!	13-Dec	Final Review
18-Oct	Fall Break: No School!	18-Dec	Final: 8-10 am
21-Oct	Ch. 5: Chemical Reactions		

CHEM 1110 Lab Schedule

Week of:

26-Sep	No Lab
2-Sep	Lab 1: Build and Atom (Odd Sections: in HEB 2030, Even Sections: in HEB B120)
9-Sep	Lab 2: Precipitation Reactions, Lab Check-In (meet in the lab room/time you enrolled in)
16-Sep	Lab 3: Measurements
23-Sep	Lab 4: Molecular Modeling (Odd Sections: in HEB 2030, Even Sections: in HEB B120)
30-Sep	Lab 5: Wet and Dry Ice
7-Oct	Lab 6: Crushing Cans and the J-Tube
14-Oct	No Lab: Fall Break
21-Oct	Lab 7: Chemical Reactions and Solubility
28-Oct	Lab 8: Kinetics and Catalysis
4-Nov	Lab 9: Le Chatelier's
11-Nov	Lab 10: Solutions
18-Nov	Lab 11: Acid-Base Titration of Vinegar and Citric Acid
25-Nov	No Lab: Thanksgiving
2-Dec	Lab 12: Buffers and Hydrolysis, Lab Check-Out
9-Dec	No Lab

Other Important Dates:

28-Aug: First *Learn Smart Module* Due and First day of Clickers

9-Sep: First day of Discussions

In general, *Learn Smart* modules will be due every Sunday

See the 'Syllabus' page of Canvas for all class dates.