

Chemistry 111L-General Chemistry Laboratory

Instructors:	Dr. Chris Bender	Dr. Ronald Sobczak
Office:	Smith 415	Smith 408
Phone:	503-5755	503-5756
E-mail:	cbender@uscupstate.edu	rsobczak@uscupstate.edu
Office Hours	M 1:00-3:00, TTh 9:15-10:45, and by appt	MWF 9-10, M 12:00-1:00, Th 12:05-1:05

Class times:

Section 1: Monday 9:00-9:50 (recitation, Smith 203) and 10:00-12:15 (lab, Smith 401)

Section 2: Monday 1:00-1:50 (recitation, Smith 203) and 2:00-4:15 (lab, Smith 401)

Required Materials:

Chemistry 111 Lab Manual (revised for **Spring 2010**)

Computer storage device (3.5" diskette or USB drive—to save your spreadsheet data)

1 pair of goggles stamped with Z87.1 (available in the bookstore)

Objective: Chemistry is an *experimental science*. Ultimately, chemical knowledge, laws, models, and theories are based on or must be consistent with experimental observations. In the current educational jargon, *experiential learning* is the very essence of chemistry. In chemistry lab, you will develop skills in observing and measuring phenomena, in interpreting these observations and data in order to convert them to scientific information, and in evaluating the validity of the results. The lab experience is much more than merely following a recipe: your task is to connect the experiments you do with important concepts such as *elements and compounds, the mole, electronic energy levels and electromagnetic radiation, chemical reactions and stoichiometry*, etc. so that you see the link between these concepts and their experimental foundations.

Safety: All students are required to wear goggles at **all** times in lab. Even if YOU are done with lab or are only doing calculations, if you are in the lab, goggles must be worn. Furthermore, sandals and clogs are NOT permitted to be worn in lab. You must have close-toed shoes to perform work in the laboratory. If you arrive with inappropriate footwear, you will not be allowed to start lab until you have corrected the problem. Lastly, the wearing of shorts, skirts above the knee, or exposed midriffs is discouraged in lab; if you choose to do so, you must wear a lab apron for protection.

Come to lab prepared: Read the lab manual, answer the prelab questions, view the appropriate ChemPages modules, and study the calculations required in the lab exercise. There will be a short prelab quiz before each lab (the lab instructors may give these quizzes in recitation at their discretion). During the lab period you will be recording observations and measurements on the data sheets in your lab manual. Remember to bring your calculator and computer storage device to lab.

Attendance: All experiments are expected to be performed (see schedule on back of this page). There is no make-up lab so it is imperative that you attend every lab section, however your one lowest lab grade will be dropped. You will still be responsible for this material on any lab exams or quizzes.

Academic Honor Code: Section II.B. Cheating. Though a nearly ubiquitous problem on college campuses around the country, cheating will not be tolerated in any form. Please pay particular attention to all parts in the student handbook (listed in the lecture syllabus). Students found to be cheating will be referred to the Dean of Students for appropriate sanctions. This action could result in the expulsion from class with a failing grade. Students who admit responsibility or who are found responsible through the Student Code of Conduct will receive the appropriate grade determined by the professor, which may include an X to signify academic dishonesty. Grades with an X are not subject to grade forgiveness.

Grading: The lab grade will count as 25% of your Chemistry 111 grade. The lab grade will be based on your lab reports, quizzes, written abstracts, and the lab midterm and final exam. Below are some criteria on which your lab reports will be graded:

1. All data/observations are obtained and recorded in the appropriate location.
2. All questions in the lab report are answered clearly and accurately. Responses requiring more than a couple of words are written in sentences that are logical and conform to conventional rules of grammar.
3. All calculations are performed accurately and presented in a clear manner with the appropriate significant figures and units.

4. All work is legible.
5. The report is turned in on time.
6. The work and experimental data presented is your own. The answers to questions must be written in your words. **You** must perform all calculations. Any copying or plagiarism will incur consequences. (See the USC Upstate Student Handbook.) ***In addition, do not let your work be copied.***

The possible points for each lab assignment are shown in the table on the last page. There is room in this table to include your score for each graded piece so you can keep track of your progress in the course.

Deadlines: Unless otherwise announced by the lab instructor, lab reports are due at the beginning of the next lab meeting (1 week); a 10% penalty will apply for late reports (up to one week late), and ***no reports will be accepted more than one week late.*** Near the end of the semester, normal deadlines may be shortened; all reports must be submitted by the last day of classes, **Monday April 26.**

Auditing a course: Due to safety concerns, students are not able to audit the lab course. See instructor for details.

Students with disabilities: In keeping with University policy, any student with a disability who requests academic accommodations should contact Disability Services at 503-5199 to arrange a confidential appointment with the Disability Services Coordinator. Students are encouraged to seek an appointment as early in the semester as possible, as accommodations are not provided retroactively. Letters of accommodation must be signed and printed on letterhead from the Disability Services office. It is the student's responsibility to provide these letters to professors in a timely manner so that accommodations may be put in place.

Chemistry 111 Lab Schedule Spring 2010		
Lab Date	Experiment	Work to be turned in at the start of lab
Jan 11	No lab first week	N/A
Jan 18	MLK Day—No classes	N/A
Jan 25	0 Safety and Check-in	N/A
Feb 1	1 Basic Lab Techniques	Spreadsheet exercise, Safety exercise
Feb 8	2 Paper Chromatography	Exp. 1 report
Feb 15	3 Physical Properties	Exp. 2 report
Feb 22	7 Hydrogen Emission	Exp. 3 report
Mar 1	8 Periodic Properties	Exp. 7 report
Mar 8	!!!!!!!!!!!!!!Spring Break!!!!!!!!!!!!!!	
Mar 15	4 Alum from Aluminum Cans*	Exp. 8 report
Mar 22	5 Solutions and Titrations #1	Exp. 4 report & abstract for alum
Mar 29	6 Chemistry of Copper Midterm exam <i>given in recitation</i> on experiments 1-3, 7-8.	Exp. 5 report
Apr 5	9 Molecular Shapes	Exp. 6 report
Apr 12	10 Thermochemistry*	Exp. 9 report
Apr 19	11 Gas Laws	Exp. 10 report & abstract for Thermochemistry
Apr 26	Check-out, final exam <i>given in lab</i> on experiments 4-6, 9-10.	Exp. 11 report
* indicates that you will have to write an abstract		

Experiment/Exam	Work	Possible Score	Your Score
0 Safety	Safety exercise	10	
	Spreadsheet	20	
	Safety quiz	10	
1 Basic Lab Techniques	Prelab quiz	10	
	Lab report	40	
2 Paper Chromatography	Prelab quiz	10	
	Lab report	40	
3 Physical Properties	Lab report	40	
4 Alum	Prelab quiz	10	
	Lab report	40	
	Abstract	50	
5 Solutions and Titrations	Prelab quiz	10	
	Lab report	40	
6 Chemistry of Copper	Prelab quiz	10	
	Lab report	40	
7 Hydrogen Emission	Prelab quiz	10	
	Lab report	40	
8 Periodic Properties	Prelab quiz	10	
	Lab report	40	
9 Molecular Shapes	Prelab quiz	10	
	Lab report	40	
10 Thermochemistry	Prelab quiz	10	
	Lab report	40	
	Abstract	50	
11 Gas Laws	Prelab quiz	10	
	Lab report	40	
Check-out	Check-out assignment	10	
Portfolio	Portfolio of graded work	30	
Midterm exam	Experiments 1-3, 7-8	200	
Final exam	Experiments 4-6, 9-10	200	
TOTAL OF ALL POINTS		1120	
Total (dropping lowest lab report)		1080	
Grade	Divide your total by 1080 and multiply by 100		

The portfolio will be submitted on the last day of class and will include all graded assignments. By keeping assignments together it will act as an aid with which you can better study for the lab midterm and final exam.

Consult a physician if you are pregnant or have any other medical condition which might render you susceptible to the chemicals used in this laboratory.

Students with disabilities please notify me of special needs within the first week of classes.

Disclaimer. The instructor may modify this course and syllabus to accommodate unforeseen circumstances.