

Instructor: Lisa Lever, Ph.D.

Office: Smith 409

Web site: <http://faculty.uscupstate.edu/llever>

Office hours: M 11:00-12:00, TTH 9:30-11:00, F 10:00-11:00 and by appointment

Phone: 503-5713

email: llever@uscupstate.edu

Required materials: USC Upstate Chemistry 112 Lab Manual (revised for Fall 2010)
USB flash drive
1 pair of goggles stamped with Z87.1 (available in the bookstore)
Lab notebook with bound pages for the qual experiments

Objective: Chemistry is an *experimental science*. Ultimately, chemical knowledge, laws, models, and theories are based on or must be consistent with experimental observations. In chemistry lab, you will develop skills in using the tools of the trade, in observing and measuring phenomena, in interpreting these observations and data in order to convert them to scientific information, in performing calculations using spreadsheets, in evaluating the validity of the results, and in communicating results through scientific writing.

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. You are responsible for having your goggles at the beginning of each lab period. Goggles may be locked in your locker between labs. You must wear closed-toe 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. In addition, if you wear shorts or skirts that end above the knees or clothing that exposes your midriff, you must wear a lab apron for protection. These are available in the lab.

Come to lab prepared: Come to lab prepared by having read the experiment in the lab manual and the appropriate background material in your textbook. Answer all prelab questions in the lab manual. Review the appropriate ChemPages modules on the computers in the Smith 4th floor computer lab.

Attendance: There are no make-up labs in this course. If you miss a lab, the grade for that lab is a zero. You are responsible for material you missed due to absence.

Lab experiments 1-3 and 5-7:

Lab reports and abstracts: Unless otherwise announced by the lab instructor, completed lab reports and abstracts will be collected at the beginning of the lab period the following week. Late lab reports and abstracts will receive a 10% penalty, **and no work will be accepted more than one week late**. In order to prepare for the final exam, keep your graded work, including reports and quizzes in a portfolio to be turned in at the final exam.

Below are some criteria on which your work will be graded.

1. All experiments are conducted in a safe manner.
2. All data/observations are obtained and recorded in the appropriate location.
3. 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.
4. All calculations are performed accurately and presented in a clear manner with the appropriate significant figures and units.
5. All work is legible.
6. The report is turned in on time.
7. **The work and experimental data presented is your own.** The answers to questions must be written in your own words. You must perform all calculations. Any copying or plagiarism will incur consequences. (See the USC Upstate Student Handbook for details.) In addition, do not let your work be copied.

Grading: Each lab report for experiments 1, 3 & 5-7 will be worth 50 points. One abstract (50 points), on Expt. 6 will be required. A final exam (worth 200 points) will be given on experiments 1, 3 and 5-6 during the last lab period. Prelab quizzes will be given on experiments 1, 3 & 5-7.

Lab experiment 4, Qualitative Analysis:

Lab notebooks: Students must bring a "bound" (sewn) notebook to each lab period. Students will not be permitted to begin the qual lab without this notebook - they are rather expensive if purchased at the last minute at the campus bookstore! A notebook from another lab course may be used if there are sufficient unused pages. Lab notebooks must be checked and initialed by the instructor before leaving lab each week.

Lab quizzes: Two quizzes will be given on the qual experiment: Qual Quiz 1 is on part 1 & 2 cations and Qual Quiz 2 is on part 3 & 4 cations. These quizzes will be given during recitation on Oct. 11 and Nov. 1.

Grading: Students will be graded on the identification of the qual unknowns, the quizzes, and the lab notebook.

Chem 112 Lab Schedule Fall 2010		
Date	Experiment	Work due or quiz
Aug. 25	0 Safety, check-in	
Sept. 1	1 Colors and Reaction Rates	Spreadsheet exercise, safety quiz, prelab quiz
Sept. 8	2 A Chemical Clock	Expt. 1 report, prelab quiz
Sept. 15	3 Chemical Equilibria	Expt. 2 report, prelab quiz
Sept. 22	4 Qualitative Analysis - Cations group 1 & 2	Expt. 3 report
Sept. 29	4 Qualitative Analysis - Cations group 1 & 2	
Oct. 6	4 Qualitative Analysis - Cations group 3 & 4	
Oct. 13	4 Qualitative Analysis – General cation unknown	Qual quiz 1 (given in rec.)
Oct. 20	4 Qualitative Analysis - Anion unknowns	
Oct. 27	4 Qualitative Analysis - Salt unknown	
Nov. 3	5 pKa of a Weak Acid	Qual quiz 2 (in rec.), Prelab quiz
Nov. 10	6 Ksp of Lead(II) Iodide	Expt. 5 report, prelab quiz
Nov. 17	7 Electrolysis	Expt. 6 report and abstract, prelab quiz
Nov. 24	Thanksgiving Holiday	
Dec. 1	Check-out, lab final exam	Expt. 7 report, Portfolio

Disclaimer: The instructor reserves the right to make adjustments in the syllabus and schedule as necessary.

In keeping with University policy, any student with a disability who requests academic accommodations should contact Disability Services at 503-5195 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.

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

Grading summary:

Assignment	Max. points	Your grade
Safety Quiz	10	
Spreadsheet exercise	20	
Prelab quizzes Expt. 1-3, 5-7 (10 points ea)	60	
Expt. 1 Colors and Reaction rates report	50	
Expt. 2 A Chemical Clock report	50	
Expt. 3 Equilibrium report	50	
Expt. 5 pKa of a Weak Acid report	50	
Expt. 6 Ksp report	50	
Abstract on Expt. 6	50	
Expt. 7 Electrolysis report	50	
Group 1 & 2 cation unknown	100	
Group 3 & 4 cation unknown	100	
General cation unknown	100	
2 Qual anion unknowns @ 50 points each	100	
1 Salt unknown @ 50 points each ion	100	
Qual quiz 1 Group 1 & 2 cations	100	
Qual quiz 1 Group 3 & 4 cations	100	
Qual lab notebook	30	
Final exam	200	
Portfolio	20	
Check out	10	
Total (25% of course grade)	1400	
To determine your grade in lab, add all the points you have accumulated, divide by the total possible points and multiply by 100.		