



Chemistry 111—Laboratory
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The labs for Chem 111 are meant to introduce you to aspects of chemical laboratory procedures and techniques that are necessary for success in later chemistry courses. These include synthesis and characterization of products, analysis of chemical mixtures, design of chemical experiments, and the use of chemical observations to determine chemical composition. In most experiments, students will work individually. You are welcome to consult with your teaching assistant, instructor, or lab mates but remember that your grade ultimately depends on your own work.

Please note the following reminders concerning lab safety. **Unsafe behavior in Lab will not be tolerated. Repeated unsafe behavior will result in a zero for that lab.**

As a student chemist, you will be working in many situations that demand your utmost care and attention to protect the safety and health of yourself, your fellow students, and the environment. Adequate preparation and careful, patient work are needed to obtain the results required of each experiment. To ensure that everyone completes each experiment safely, here are the rules for completion of experiments in this lab:

- Safety glasses must be worn at all times
- You may not eat, drink, or use tobacco
- No horseplay will be tolerated
- Unauthorized, "independent" experiments are not permitted
- No sandals (closed toe shoes only) or shorts (long pants only) may be worn
- All accidents and injuries must be reported immediately.
- You should know the location of all exits and emergency equipment (fire extinguishers, fire blanket, eye wash, showers, etc.)
- If you are unsure if you are performing a technique safely, ask the instructor or teaching assistant first
- ***Wearing contact lenses in lab is highly discouraged.*** If you do wear them in lab, you **MUST** inform the lab instructor and you **MUST** wear a full goggle.
- You should wear older clothes - they could be stained or ruined.
- Use common sense and your intuition—if it seems dangerous, ask first!

Your Lab Notebook should be neat, well organized, up-to-date and complete, with a Table of Contents. Leave room to record your data, the uncertainties in measurements, and any observations about the experiment. Use a different notebook page for each day's data, and submit the carbon at the end of the lab period.

Lab reports consist of the already submitted carbon copies of your notebook pages, the appropriate report form (if required), sample calculations, and answers to any questions. They are due one week following completion of the experiment. Additional instructions may be given in the pre-lab lectures. Reports are due prior to the pre-lab lecture on the date shown on the schedule below – again, changes may be announced in lab. **Late labs will be penalized 10% plus 1 point per day late (weekends count as one day) and can be turned in for credit no later than two weeks from the original experiment date.** Prelab questions and TOA (Title, Objective, and Approach) are due prior to the pre-lab lecture and will not be accepted late.

Only absences where the instructor is notified ahead of time will be excused and a make-up permitted. All requests to make up a lab or attend a section other than your normal lab can only occur after consultation with the instructor. Lab make-ups must be scheduled by the end of the week that the lab is missed and must be completed by the end of the following week. Students who simply show up at a different lab section will not be admitted to that lab.

TENTATIVE LABORATORY SCHEDULE
General Chemistry 111, Lycoming College, Spring 2009

Week of	Experiment	What's Due
Jan. 12	Check-in; Safety; Experiment 1, Statistics for Determining Accuracy and Precision	Receive Key
Jan. 19	Experiment 2 Do Double Stuff Oreos Really Have Double the Stuff?	TOA and Accuracy/Precision lab report; Labeled vial
Jan. 26	Experiment 3 Proper Use of Volumetric Glassware	TOA and Oreo lab report
Feb. 2	Experiment 4 Gravimetric Analysis of Ni⁺²	TOA and Calibration lab report; Labeled test tube
Feb. 9	Experiment 4 Gravimetric Analysis of Ni⁺²	
Feb. 16	Experiment 4 Gravimetric Analysis of Ni⁺²	
Feb. 23	Spring Break—No Laboratory This Week	
Mar. 2	Experiment 5 Qualitative Analysis of Cations	TOA and Gravimetric lab report; Labeled vial
Mar. 9	Experiment 5 Qualitative Analysis of Cations	
Mar. 16	Experiment 6 Titrimetric Analysis; Standardization of NaOH and Analysis of unknown acid composition	TOA
Mar. 23	Experiment 7 Vinegar Analysis; Design of an experimental analysis	TOA and Titrimetric lab report
Mar. 30	Experiment 8a Synthesis and Characterization of Aspirin	TOA and Vinegar lab report
Apr. 6	Experiment 8b Synthesis and Characterization of Aspirin	
Apr. 13	Experiment 8c Synthesis and Characterization of Aspirin	
Apr. 19	Check-out	Aspirin lab report; Turn-in Key