

CHEMISTRY 213
LABORATORY SCHEDULE
Spring 2008

TEXTBOOKS: "Chemistry 213 Lab Manual, 2nd ed.", © 2007 by Outernet Publishing/Thomson Education (Experiments as listed below.)

REQUIRED EYE PROTECTION: Students must wear the approved goggles issued by the department *at all times in the laboratory—NO EXCEPTIONS.*

Week	EXPERIMENT
1. Jan. 14 th	NO LABS - TA ORIENTATION.
2. Jan. 21 st	MLK Birthday (Monday, January 21st) - NO LABS!
3. Jan. 28 th	CHECK-IN / SAFETY ORIENTATION : Safety in the Laboratory; Glassware & Equipment/Data Representation and Recording
4. Feb. 4 th	Determining the Solubility of a Salt at Various Temperatures
5. Feb. 11 th	Colligative Properties: Freezing Point Depression of Electrolyte Solutions
6. Feb. 18 st	The Iodine Clock: A Mathematical Approach
7. Feb. 25 th	Introducing Equilibrium
8. March 3 rd	Evaluating the Equilibrium Constant for the Reaction of Iron (III) Ion with Thiocyanate Ion
9. March 10 th	Spring Break
10. March 17 th	LAB MIDTERM EXAM
11. March 24 th	Determining the Dissociation Constant of a Weak Acid Using pH Measurements
12. March 31 st	Solubility Product Constant of Lead (II) Iodide
13. April 7 th	Analysis of Group I Cations
14. April 14 th	Evaluation of 0 Kelvin
15. April 21 st	Electrochemistry: The Nernst Equation / CHECK OUT
16. April 28 th	LAB FINAL EXAM

***FAILURE TO CHECK OUT MAY RESULT IN A FAILING GRADE FOR THE ENTIRE SEMESTER.**

Grading: Lab grades are calculated as a weighted average in which the lab exercises comprise 70%, and the Midterm and Final Exams comprise 15% each. The weighted average is used to assign grades based on the distributions indicated below:

> 90% = A; > 80% = B; > 70% = C; > 60% = D; < 60% = F

LABORATORY DIRECTIONS AND COURSE OBJECTIVES

1. **APPROVED EYE PROTECTION IS REQUIRED IN THE LABORATORY AT ALL TIMES BY ILLINOIS LAW.** Shorts, skirts, and open-toe shoes or shoes without socks are *not* permitted (i.e., no bare skin below the waist). Shirts covering the entire torso and having sleeves are also required. Students *will not be permitted* in the laboratory without eye protection and proper clothing in place.
2. If you are injured in *any* way during the laboratory, immediately report it to your lab instructor.
3. The laboratory is to be conducted in a quiet and orderly manner.
4. Do your laboratory work and your report independently unless otherwise instructed. Laboratory questions should be directed to your laboratory instructor.
5. Use only designated chemicals. Read labels and follow directions carefully. Do *not* do unauthorized experiments.
6. (a) **USE AS LITTLE REAGENT AS NEEDED TO PERFORM YOUR EXPERIMENT.**
(b) Avoid contamination of the reagents! Never return unused chemicals to the stock bottles, as this may cause other students' experiments to suffer.
(c) The reagent bottles should not be carried to your bench. Use clean test tubes or beakers for carrying liquids. Use beakers, watch glasses, or small squares of paper for carrying solids.
(d) Pour the reagent solutions into your own containers, in order to avoid contamination of the stock solutions. Do not insert your own pipettes or medicine droppers into the reagent bottles.
(e) Hold bottle stoppers in your hand to avoid picking up any impurities from the bench and thus contaminating the solution when the stopper is put back on the bottle.
(f) Replace stopper or cap tightly to avoid evaporation or spillage.
7. Clean up and properly dispose of all spills—liquids or solids—***immediately***. This is especially important in and around the balances. Some corrosive chemicals may permanently damage equipment or laboratory fixtures.
8. Throw all chemicals to be discarded into the waste containers and record them on the waste inventory sheet. Wastepaper belongs in the wastebaskets. Broken glass should ***only*** be discarded in the glass containers.
9. At the close of each laboratory period, leave your glassware clean and dry. Wash and wipe off the bench top.
10. If you withdraw from the course before the end of the semester you must still check out of the laboratory, or your withdrawal cannot be completed. At the end of the semester, failure to check out during the assigned time may result in a ***failing grade*** for the lab.

Course Objectives

On completion of this course, students are expected:

1. To have learned how to write chemical formulas, name compounds, perform chemical calculations, make observations and record the data from those observations appropriately.
2. To be familiar with the behavior and properties of gases, liquids, solids, and aqueous solutions.
3. To have learned how to work safely in a chemistry laboratory.
4. To have learned how to manipulate scientific equipment and to carry out laboratory experiments.

Course Grades

Laboratory grades will be determined using a weighted average as follows: lab exercises (70%), midterm (15%) and lab final (15%). Final grades will be assigned based on location of weighted average in the following distribution:

A = 90%

B = 80%

C = 70%

D = 60%

F < 60%

(rev 8/96 WRM; 1/06 DSB/MJS)