CHM 151IN Laboratory Schedule for Fall 2010

Week of	Days	Experiment
Aug 25 - 27	Wed-Fri	Meet classes, distribute lab schedules. No experiment
Aug 30 – Sept 3	Mon-Fri	Safety Lecture (NOTE: Safety test given either this week or next week) Check-in Review of lab policies, proper lab techniques, and use of laboratory balances.
Sept 7 – 13	Tues-Mon	Safety Test (See NOTE, above) Extraction and Analysis of Plant Dyes: (Lab manual, page 1) Extraction and Filtration of the Dye and Analysis of the Dye Using Thin-layer Chromatography Analysis of the Dye Using Absorption Spectrophotometry Analysis of the Dye by Observation of Acid-base Properties
Sept 14 - 20	Tues-Mon	Determination of an Empirical Formula (Lab manual, page 7)
Sept 21 – 27	Tues-Mon	Precipitation Reactions and Pigments: (Lab manual, page 11) Precipitation Reactions Making a Pigment
Sept 28 – Oct 4	Tues-Mon	Determination of Copper in an Alloy (Lab manual, page 39) Exploring the Copper Cycle Determination of Copper Using Wet Chemical Methods
Oct 5 - 11	Tues-Mon	Determination of Ascorbic Acid in a Vitamin C Tablet (Lab Manual, page 21) Standardization of the Base and Determination of Ascorbic Acid by Acid-base Titration
Oct 12 – 18	Tues-Mon	Determination of Ascorbic Acid in a Vitamin C Tablet (Lab Manual, page 21) Determination of Ascorbic Acid by Redox Titration *Note: Choice Lab proposal due this week.*
Oct 19 - 25	Tues-Mon	Determination of Iron in a Multivitamin Tablet (Lab manual, page 45)
Oct 26 – Nov 1	Tues-Mon	Measurement of the Heat Capacity of a Metal (Lab manual, page 53)
Nov 2 – 8	Tues-Mon	Heat of Combustion of Magnesium (Lab Manual, page 61)
Nov 9 – 10	Tue-Wed	Choice Lab
Nov 11	Thurs	Veterans Day – College closed
Nov 12 - 18	Fri-Thurs	Choice Lab
Nov 19 - 24	Fri-Wed	Choice Lab
Nov 25-26	Thurs-Fri	Thanksgiving Holiday – College closed
Nov 29 – Dec 3	Mon-Fri	The Ideal Gas Law: Determination of a Molecular Weight (Lab manual, page 35)
Dec 6 – 10	Mon-Fri	Choice Lab Presentations Final Lab Checkout
Dec 13 - 17	Wed-Tue	Final Exam week – No labs

Choice Labs for Fall 2010

Choice labs are a final laboratory project for the semester.

Your group or team will select one of the following topics to investigate and writes a proposal for the experiment that must be submitted to your instructor no later than **October 18, 2010.**

Each of the choice lab projects must be selected by one group or team before a second group can choose the same project.

The proposal must include:

a. An abstract of the experimental design
b. An initial procedure
c. The type of data that will be collected
d. The apparatus and chemicals that will be required

Choice lab presentations:

a. Consists of a poster or PowerPoint and oral presentation to share with the class
b. Contains a written report of the investigation
c. Has contributions from each member of the group.

The Choice Lab Projects are:

Project 1:

You are given two ores of copper. Determine the percentage of copper in each ore.

a. Determine the percent of copper in each ore sample.
b. Based on the current price of copper, and associated chemicals, estimate the approximate cost of extracting the copper from 1 metric ton of ore.

Project 2:

You have solutions of 5 chemical compounds, identify them.
The unknowns come from the following list:

H_2SO_4	HCl	HNO_3	NH_3	NaOH
$AlCl_3$	$AgNO_3$	$BaCl_2$	$CuSO_4$	$FeCl_3$
KI	$Pb(NO_3)_2$	NaCl	Na_2CO_3	Na_3PO_4

You will not receive any additional chemicals.

Project 3:

Determine the percent of calcium carbonate in an eggshell. You will receive one egg. (Alternative: Calculate the percentage of calcium carbonate in a seashell)

Project 4:

You are given a lime or lemon-lime drink colored with FD&C artificial food colors and 0.10% solutions of standard FD&C food colors. Determine the identity and concentrations of the food dyes in the beverage.

Laboratory Policies

This is an integrated class, which means that your laboratory grade is part of your final course grade. You must pass both the lecture portion and the laboratory portion to pass the course.

You are expected to read each experiment and check the safety precautions for all chemicals used in the experiments before coming to class. A pre-lab assignment may be required. Your laboratory instructor will provide more information on these requirements.

If you are not prepared for lab, you may be asked to leave and will receive a grade of zero for that laboratory experiment.

Laboratory reports follow the format outlined by your lab instructor. (A suggested laboratory report format is given later in this syllabus.) Data analysis calculations, graphs, and questions must be completed for each laboratory report.

Reports are due no later than **one week** after the experiment is completed.

Laboratory reports are graded based on neatness, completion of introductory information, completion and presentation of data, sample calculations, summary of results and conclusions, and answers to questions.

Laboratory reports may be graded on a 10 point, 100 point, or other point scale, by your laboratory instructor.

Missed or incomplete experiment reports may be graded as a zero.

Choice labs and the presentation count as a double experiment.

Questions based on the laboratory experiments and calculations may appear on exams and quizzes in the lecture portion of this course. You are responsible to know how a laboratory experiments works (theory and general procedure) and how to do the calculations.

LABORATORY SAFETY

Laboratory safety is a major component of working in a chemical laboratory. At the beginning of the semester, you are given a safety lecture and a safety exam.

You must abide by the safety rules during the semester. This includes wearing safety goggles when working with chemicals, wearing closed shoes, not sandals or flip-flops, appropriate dress, and following proper methods of chemical disposal. Non-compliance may result in you being asked to leave the laboratory with a grade of zero for that day.