Instructor: Xizhe Zhao, Yang Liu
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Class Hour: Thu. 6:30-8:10p.m.
Location: 6s-251
Texts: Laboratory Experiments for Introduction to General, Organic and Biochemistry

    Custom Lab Manual

Course description:

Experiments illustrate crucial chemical concepts discussed in lectures and highlight current interpretations of experimental data, based on modern lab techniques.

Learning Objectives:

(1) The student will learn how to work safely in a chemical laboratory
(2) The student will demonstrate knowledge of the use of chemical experimental setups
(3) The student will be able to collect and analyze data
(4) The student will communicate his or her findings by writing concise reports

Class Attendance:

You are required to attend each class on time. A discussion of each experiment will be provided before you start the experiments and the in-class quizzes will also be held at the beginning of your class. Lateness is not acceptable.

You need to complete the experiments during the class hour in order to receive credit for the course.
If you miss two or more lab classes, you will receive an F grade regardless your final score of the course.

**Lab Reports:**

Lab report is very important for the lab course. Each lab report is 100 points (including 20 points of pre-lab assignment, 40 points of data sheet and calculations, 30 points of post-lab assignments and 10 points of experiment discussion).

You should be prepared before you attend the lab course. To understand the purpose and the procedure of the experiment, you need to read the lab manual, textbook, take pre-lab notes and study pre-lab assignment before the class. Submit you pre-lab assignment at the beginning of the lecture.

Print your result directly on the data sheet on the day of your experiment. Your data sheet and calculations needs to be checked and signed by your instructor before you leave the lab of the day to earn the credit. To earn the full credit (40 points) of the data sheet, your data and results needs to be accurate with proper formulas, units and significant numbers. Calculation without showing your work receives no credit.

Answer all the assigned questions from post-lab questions section in your lab manual. Print your answers clearly on the lab manual.

Type your experiment discussion in one page (around 200-300 words and double spaced). The following information should be included: (a) title; (b) your name and your partner’s name; (c) date of the experiment; (d) the purpose of the lab; (e) the fundamental principle or theory behind the experiment; (f) the brief procedure(s) or methods to reach the goal of the experiment; (g) your experimental results and finding and discussion about the possible experimental error(s). Do NOT give detailed procedures and detailed results in discussion.

Your post-lab is due on the day of the following week of class. Staple your post-lab in the order of experiment discussion sheet, data sheets/calculation and post-lab assignment. You must turn in your lab report at the beginning the class to earn the credit. If you are absent, no post-lab including data sheet, post-lab assignment and experiment discussion of the lab will be accepted and graded.

The lab report (pre-lab and post-lab) counts 60% of the lab grade. Late reports will be accepted but you will receive a penalty by losing 3 points per late day per assignment (9 points will be deducted if you turn in your post-lab packet one day late). Lab reports later than one week will not be accepted.
Safety and Cleanliness:

Safety is extremely important in chemistry laboratory. To be safe, you should be aware of the safety policies and practices.

Safety goggle should be worn at any period of the class. You are not allowed to be in the laboratory without wearing the safety goggle. Gloves should be worn when you handle any chemicals.

You will be deducted 1 point for each violation from your final score.

Attitude:

Disruptive behavior is unacceptable in the lab, and will NOT be tolerated. Late arrival, noisy devices, inconsiderate behavior, and talking during lectures, will not be tolerated. Discussion of scientific issues is highly welcome to advance our knowledge, but emotional arguments and quarrels are prohibited.

Final Exam (35%)

There will be a departmental final exam in the final week (December 16-23). Final exam counts 35 % of your lab grade.

Academic Honesty:

You will work with your lab partner during the experiment. You help with each other while doing the experiment. However, you must work independently on your pre-labs, data sheet/calculation and post-labs. You shouldn't copy any other person's work including any online resources as your own. Cheating, copying and plagiarism will result an F grade and will be reported to the department and the college.

Grading:

Lab reports – 60 %

Final Exam – 35 %
Attendance, Safety, Cleanliness and Attitude – 5%

**Lab Schedule:**

01/29  Check In and Lab Safety
02/05  Classification and Identification of Hydrocarbons
02/19  Quantitative Analysis of Vitamin C Contained in Foods
02/26  Classification and Identification of Alcohols and Phenols
03/05  Classification and Identification of Aldehydes and Ketones
03/12  Properties of Carboxylic Acids and Esters
03/19  Preparation of Acetylsalicylic Acid (Aspirin)
03/26  Properties of Amines and Amides
04/02  Analgesic Drug Analysis by TLC
04/16  Carbohydrates
04/23  Analysis of Lipids
04/30  Isolation and Identification of Casein
05/07  Factors Affecting Enzymatic Activity
05/14  Check out and Final Exam