Chemistry 120 Laboratory

Instructor: Ms. Harmon
220A Pierce Hall
(770)-784-8341

Office Hours:
Thursday 1-2 and
by appointment. Drop in
organic lab on Mon & Tues after 2:00

Goal Statement:

At the end of the Chemistry 120 laboratory course students should be able to think like a chemist to solve a small range of health related chemistry problems using the scientific method. This includes making observations, developing hypotheses, and designing appropriate experiments. The students should be able to perform these experiments using some of the major techniques chemistry and construct tables and graphs to analyze their data. Finally, students should be able to interpret and communicate their results in written form.

Objectives:

At the end of this laboratory course students should gain an understanding of: the use of acid-base titrations in analyzing consumer products and over-the-counter medications; osmosis and the effects of the changing ion concentrations in the blood; the properties of fats and soap, the isolation and identification of organic compounds of pharmaceutical interest from natural products; and the use of organic synthesis in drug design. Students should be able to set-up and maintain a freshwater aquarium and be able to monitor water quality. Students should gain an understanding of how the chemical concepts of pH, temperature and dissolved oxygen, equilibrium and chemical manipulation of fish waste, with respect to maintaining a freshwater aquarium.

Grading Policies

10 % Pre-lab quizzes
20 % Laboratory notebook carbon copies
60 % Written lab reports and post lab questions
10 % Instructor evaluation

Pre-lab Quizzes

You must come to lab prepared. To prepare for lab you must read the assignment -BEFORE LAB!!! The lab is student centered which means YOU, the students, are responsible for understanding the background information and performing each experiment. If you do not do the required reading before lab, this is impossible. Lack of preparation creates confusion and frustration. To help you avoid this, a pre-lab quiz will be given at the beginning of each lab. These quizzes will be worth 10 % of your total lab grade. If you are late and miss the quiz, you will receive a zero and may not be allowed to participate in lab.

Notebook Carbon Copies

It is important to keep a clear, legible record of the work you do while in the laboratory. It should explain what you planned to do, what you observed, any changes to your plan, results and any necessary calculations. After the experiment has been finished you should write a short summary statement. Before you hand it in ask yourself if someone not taking the lab could read your notebook and understand what you did and what your results were. The carbon copies of the laboratory notebook write-ups will be turned in before you leave the lab and constitute 20 % of your total lab grade.

Lab Reports

A 1-2 page report and/ or post-lab questions will be required for all of the experiments. These reports and answers to the questions should be written using a word processor. Do NOT wait until the hour before lab to write and print these reports since they constitute a large portion of your laboratory grade **(60 %).** Write and print them as soon as possible after the lab so you can allow yourself time for reflection and revision. For the reports: Make an outline of the important points that you must cover in explaining what you did and what the results were . Be concise and clear in your explanations.

Instructor Evaluation

Because this is a student centered laboratory your attitude and performance can effect the other students. During the course of the semester the lab instructor will evaluate you in the following areas: attitude, being prepared, being on time, following the safety rules, working efficiently, finishing on time, and leaving the lab clean. The evaluation score will range from 0-100 points. Most students can expect to earn a score of 85. Exceptionally courteous and efficient students can expect a higher evaluation. Rude, quarrelsome, and inefficient students can expect to receive a lower evaluation. This evaluation will count as 10 % of your total lab grade.

Honor Code Policy

During a lab session students are encouraged to discuss the experiment with others to promote understanding and exchange ideas. If you discuss notebook write-ups, questions, and calculations with other students during lab, put the answers in your own words. **Lab reports and question sheets (including calculations) are expected to be your own work!!!** Collaboration on lab reports is a violation of the Honor Code and will be reported to the honor council. It is also a violation of the Honor Code to copy any portion of a report from a previous semester's report. To protect yourself from this situation do not work together on lab reports - do your own work! If you need assistance ask your lab instructor. The usual penalty for students who are found to have violated the honor code is an automatic F in the course.

Tentative Chem 120 Lab Schedule

Spring 2002

	Date	Experiment	Title
1	Jan. 21	*Lab Course Introduction*	*Handouts/Safety*
2	Jan. 31	Assignment #1	Comparison of antacids
3	Feb. 7	Aquarium work	*Set-up*
4	Feb. 14	***No lab***	***No Lab***
5	Feb. 21	Aquarium work	*Monitor water quality*
6	Feb. 28	Aquarium work	*Introduce fish! Plan your experiments*
7	Mar. 7	Assignment # 2	TLC of analgesics
8	Mar. 14	**NO LAB**	**Spring Break**
9	Mar. 21	Assignment # 3	Caffeine in tea bags
10	Mar. 28	Workshop	Reactivities of Hydrocarbons
11	Apr. 4	Assignment # 4	Fat in potato chips
12	Apr. 11	Assignment # 5	Synthesis of Aspirin
13	Apr. 18	Assignment # 6	Synthesis of Soap
14	Apr. 25	Workshop	Polymers/Slime/Silly Putty