
CHEM326: Biochemistry I Laboratory (Spring 2024)

Lab: Caputo 225	Mon 1:00-3:50 (A) or Tues 1:10-4:00 (B)
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Caputo 325	717-871-7414
Office Hours: Mon 11-1, Wed 11-12, Thurs 10-12, and by appointment	

Course description and objectives:

The lab in CHEM326 is designed to introduce students to general biochemical principles and methods. Each week students prepare for, carry out, and report on an experiment. The focus is to give experience in a range of fundamental biochemical techniques.

Required Supplies

Lab Instructions (provided in class or D2L) Notebook (permanently bound)

Course Policies *All policies related to the CHEM 326 lecture apply to the lab as well*

- **Attendance:** Students **must** complete every experiment. If you cannot attend a scheduled lab for approved reasons in the University-Approved Guidelines, please contact your instructor as soon as possible to arrange an alternate time.
 - **Academic Honesty:** Students are expected to conduct all work in an honest and ethical manner consistent with University policy. Labs are carried out with a partner and discussion of results, concepts, and analysis is encouraged. However, all written work must be independent work.
 - **Safe & Cooperative Environment:** Lab instructors help guide your lab work and analysis. You are expected to follow all directions regarding safety precautions and lab attire. Your legs and feet should be covered at all times, and gloves and goggles worn as recommended. Please notify your instructor of any special concerns (allergies, pregnancy, etc.) that might require alternate arrangements for your work. You must also keep lab equipment and spaces clean and tidy. Failure to follow these rules may incur a penalty.
 - **Submissions:** Students are expected to complete lab assignments according to the weekly deadlines. Late submissions may incur a penalty up to 10% per day.
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Assessment Components:

- **Weekly Lab Quiz:** These include questions related to the past lab and the upcoming lab. Students are permitted unlimited attempts to ensure concepts are understood. Complete in D2L by **8 am Monday** each week.
 - **Notebook:** Students **must** record details of their lab work by hand directly into a bound notebook during the lab session. Failure to record data appropriately may incur a penalty up to 10%. Notebooks will also be used for hand-written post-lab analysis and should then be submitted to your instructor **by 4 pm one day after completing each lab**.
 - **Post-Lab File:** Some data analysis, graphing, figures, and images will be completed electronically. These should be assembled into a single pdf file and submitted in D2L **by 4 pm one day after completing each lab**.
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Lab Notebooks

Pre-Lab Preparations:

- **Table of Contents:** Maintain a list of titles and pages for each lab.
- **Background:** Review all materials provided in D2L to prepare for each planned lab.
- **Protocol:** Cut and tape the provided protocol print-out into the notebook for reference during lab.
- **Weekly Quiz:** Complete Pre- & Post-Lab questions in D2L (*unlimited attempts*)
- **Title & Date:** Start recording each experiment with its title on a new page. The date of any work done in lab should be indicated along with the work (start or end).
- **Purpose Statement:** Write a brief rationale for the experiment, stating what will be evaluated and the method to be used. (*Note: experience with techniques is NOT the purpose of any experiment.*)

During Lab:

- **Primary Data:** Relevant information **MUST** be recorded by hand as you do each experiment. This portion of your notebook does **NOT** need to be “neat” but must be complete and clearly labeled.
 - **Experimental Record:** Methods in the protocol do **NOT** need to be rewritten. However, you **DO** need to record any measurements taken (volumes, masses, etc.) and indicate solution info (conc, pH). An assay run on multiple samples may be summarized once. You should also make notes about any procedure changes or any problems that may have affected your results.
 - **Collected Data:** Record **ALL** data, including **UNITS**, directly into your notebook. Use labeled tables and sample descriptions when possible (rather than 1, 2, 3 etc.). Each person should have **ALL** data recorded by hand in their own notebook even when collected/shared as a group.

After Lab:

- **Analysis:** Your data analysis and results will be used for reporting on each lab.
 - **Data Analysis:** Every graph or table should have a *descriptive Figure Legend* that explains the information shown. When using linear regression analysis, both the equation of the line and the R^2 value should be displayed. Data tables are needed only if they show analyzed results beyond primary data already recorded by hand.
 - **Sample Calculations:** Any calculations used for data analysis, including any data manipulations made in Excel worksheets, should be done by hand in the lab notebook. A single sample is sufficient when the same calculation is done for a set of samples.
 - **Conclusions/Applications:** Post-Lab questions on the protocol should be answered in the notebook. These may include summarizing major results, explaining data interpretation, or applying principles from the experiment to additional contexts.
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