
CHEM326: Biochemistry I Laboratory (Fall 2022)

Lab: Caputo 225 Tues: 1:10 – 4:00 pm
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Caputo 218 717-871-7439
Office Hours: Mon 11-12, Tues 9 :30 – 11 :30, Wed 2-4 *or 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

- **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 experimentation. 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 or pregnancy) 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.
 - All policies related to the CHEM 326 lecture apply to the lab as well.
 - **Notebooks:** Students **must** record details of their lab work by hand directly into a bound notebook during the lab session. Notebooks will be left with the instructor at the end of lab, so work should be scanned to pdf and submitted electronically for reference. Failure to record data appropriately may incur a penalty up to 10%.
 - **Reports:** Data analysis and experimental interpretation completed after lab. Related jpg/png files will be needed to complete Post-Lab Analysis questions in D2L within a week of finishing an experiment.
 - **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:

- **Pre-Lab D2L Quiz:** complete by **8 am the day of your lab**
 - **Notebook:** Record all data in your notebook. It will be collected 3 times throughout the semester: After Lab 2, Lab 6, and at the end of the semester.
 - **Post-Lab:** complete assignment or quiz by **Fri at 11:59 pm**.
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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.
- **Pre-Lab Questions:** Complete the D2L Quiz (*unlimited attempts*)
- **Title:** Start recording each experiment with its title on a new page.
- **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.
 - **Date:** Record the date on which work is done. Add a second date as appropriate.
 - **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.

After Lab:

- **Analysis:** Your data analysis and results will be used for reporting on each lab.
 - **Data Analysis:** Graphs or tables should have a *descriptive* title related to data shown underneath the graph. When using linear regression analysis, both the equation of the line and the R² value should be displayed. Data tables are needed only if they show analyzed results beyond the primary data recorded by hand. Please save or capture as jpg/png file and paste into question response field.
 - **Sample Calculations:** Some reports will include an example of calculations used for data analysis, including any data manipulations made in Excel worksheets. These may be done by hand and also captured as a jpg to submit.
 - **Conclusions/Applications:** Post-Lab questions may include a summary of major results obtained as well as explanations about how data were interpreted. Additional questions may also be asked that are based on understanding the principles and calculations practiced in the experiment.
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