

CHEMISTRY 325 – TECHNIQUES IN BIOCHEMISTRY

COURSE INFORMATION

Term: Fall 2000, Wednesday 1-5pm

Text: None. Materials will be provided.

Professor: Dr. Darlene M. Loprete

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SCHEDULE

<u>WEEK</u>	<u>EXPERIMENT</u>
August 23	Introduction and check-in
Week 1 - Lab 1	Biuret Assay for Proteins
Weeks 2&3 - Lab 2	Determination of the pH Optimum of β -galactosidase
Week 4 & 5 - Lab 3	Enzyme Kinetics
Week 6 & 7 - Lab 4	Gel Electrophoresis – Molecular Weight Determination
Week 8 & 9 - Lab 5	Gel Electrophoresis – Activity
Weeks 10-12 - Lab 6	Isolation and Characterization of Phosphatidylcholine from Egg Yolk
November 29	Check out
November 29	Lab Exam

DESCRIPTION

This course will expose you to fundamental lab techniques in biochemistry.

GOALS

1. To understand and perform lab experiments in biochemistry.
2. To learn to work effectively in groups.

EVALUATION (Tentative)

1. **Prelab Quizzes:** A 10 minute quiz will be given at the beginning of each lab period on the procedure being conducted that day in lab. You will be expected to know the details of the procedure and reagents used.

2. **Lab Reports:** See format below.
3. **Final Exam:** The final exam is November 29th at 1pm.
4. **Points:** The maximum number of points for each lab, the lab exam and the quizzes is given below:

Lab 1	150 points
Lab 2	150
Lab 3	200
Lab 4	200
Lab 5	200
Lab 6	200
Quizzes	100
Final Exam	<u>200</u>
	1400 - total points

5. **Final Grade:** The following is a guide in determining your final letter grade:

Total points accrued: 1260-1400	A
1120-1259	B
980-1121	C
840-979	D
Below 840	F

Pluses and minuses will be assigned within the ranges given above.

TYPICAL FORMAT FOR LAB REPORTS

TITLE PAGE: Name, date, experiment number, and title.

OBJECTIVE: Briefly state the purpose of the experiment.

CHEMISTRY: Write the chemical equations that describe all the chemical reactions that occurred in the experiment.

DATA: Present all your data in a logical fashion. Create tables for your data whenever possible.

GRAPHS AND FIGURES: Your data should be graphed using graphical programs on the computer.

CALCULATIONS: Show all calculations. If a calculation is repeated, you just need to include one sample calculation.

CONCLUSION/DISCUSSION: Briefly analyze your data and compare your value to known values when appropriate. Be sure to reference your sources.

ANSWERS TO QUESTIONS: Answers to questions in the lab should be clear and unambiguous. A poorly worded answer or one that is ambiguous will not receive credit.

QUALITY OF TECHNIQUE: The quality of your work will count in this section.

POLICIES

1. **Lab reports:** All lab reports must be typewritten.
2. **Due date for lab reports:** Lab reports are due one week after the completion of the lab. Therefore; all reports are due Thurs. By 1pm unless I specify otherwise. Late lab reports incur a penalty of 10 points per day per 100 points. A lab report handed in after 1 p.m. is considered a day late.
3. **Late Labs/Excused absences:** If you are ill or have to miss a lab (due to a death in your family or other personal matter) you must notify prior to the beginning of lab. When you contact me I will decide if your reasons are acceptable for missing lab. A strong case must be made for turning in a late lab report.
4. **Data:** You are not allowed to obtain or use another student's data without my permission.
5. **Old Lab reports:** You are not permitted to obtain, read or use old lab reports. This will be considered a Honor Code violation and the appropriate action will ensue.
6. **Email:** During the semester I will give you information via email; therefore you will be required to check you email between lab periods.
7. **Group Lab reports:** The lab reports will be a group effort. Although a group will turn in one report, all the members of the group will conduct the experiment, analyze the data and come to a consensus about all aspects of the lab report.

Guidelines for Group Lab Reports

1. Distribution of Work

Each group must agree upon the distribution of labor by the completion of the experiment. It is best to write down what all the members agree to so there is no confusion at the end when the group must assign the work percent (see below). I will not participate in this at all – the group is solely responsible for distributing the labor.

2. Grading

The lab report is a product of the group and once it is turned in and signed by each member you are asserting that you attest to the work.

Lab Report grade (100 points maximum) \div 2 = BASE GRADE

Base Grade X individual work percent = MERIT GRADE

MERIT GRADE + BASE GRADE = Final Individual Grade

EXAMPLE: Jill, Jim and Jeanine (the three J's!) comprise Group 15. They hand in their lab report and the instructor gives the report 80 points out of 100 points. The instructor looks at the work percent effort of Jill, Jim and Jeanine which THEY have agreed upon at the time the report was submitted (See below).

Jim	100%
Jill	140%
Jeanine	60%
	300% TOTAL

She then calculates the individual grades as follows:

80 points \div 2 = 40 (BASE GRADE)

Jim:

40 points X 100% = 40 points (MERIT GRADE)
40 base points + 40 merit points = 80 individual points

Jill:

40 points X 140% = 56 points (MERIT GRADE)
40 base points + 56 merit points = 96 individual points

Jeanine:

40 points X 60% = 24 points (MERIT GRADE)
40 base points + 24 merit points = 64 individual points

3. Work percent:

The work percent for each member must be agreed upon by all members and submitted along with each lab report. Some guidelines for assessing work percent are given below.

1. 100% means that the person has done an equal share of the work.
2. Less than 100% means that the person has done less than an equal share of the work.
3. Greater than 100% means that the person has done more than an equal share of the work.
4. If a person misses a scheduled meeting their work percent should be reduced 5%.
5. If one person does all or most of the typing of report increase their work percent 5%.
6. If one person proofreads the sections of the report that he/she did not write and is the only one to proofread increases his/her work percent 10%.

4. Signatures

All the members of the group must sign the lab report. Your signature means that you agree to the work percents and that all work was done by the members of the group.