

**BASTYR
UNIVERSITY**

COURSE INFORMATION FOR STUDENTS

Spring Quarter 08

COURSE NUMBER	BC 4113		
COURSE TITLE	Biochemistry for Life Science Lab II		
INSTRUCTOR	Tess Cabasco-Cebrian		
CLASS TIME	Alternating Fridays: 8AM to 12PM for Sections A and C 1PM to 5PM for Sections B and D		
CREDITS	1		
STUDENT ADVISING HOURS	By appointment Fridays 12 to 1		
PHONE	(work) 206 587-4075	(fax) 206 587-3837	(Email) tcabas@sccd.ctc.edu
Website: www.chemsccc.org			
Purchase test Scantrons in the Bastyr University Bookstore			

Students are responsible for knowing and adhering to Academic Policies and Procedures as outlined in the Student Handbook.

****Listed are the major areas to cover. Please see Course Syllabus Instructions for more details on content****

1. Table of Contents

Course Overview
Course Requirement
Evaluation/Grading
Schedule

2. Course Overview

• Course Description

The course is designed to expand on the techniques learned last quarter. Experiments include Isolation of cholesterol, amino acid analysis, size exclusion column chromatograph, restriction enzyme and bacterial transformation.

The experiments will be more challenging and interesting. It is important to come to lab prepared, **on time** and with a positive attitude. Remember the definition of "experiment." Although the experiments have been tried and are known to work, sometimes they do not. Failure of an experiment is just as important a learning tool as one that works. It allows you to examine the procedure more thoroughly to determine what went wrong. A degree of enthusiasm and the willingness to learn and work hard are the key to a successful lab experience.

- **Major Course Educational Objectives**

1. Utilized techniques learned from Biochemistry Lab I
2. Introduce molecular biochemistry techniques
3. Develop data analysis skills
4. Learn to write complete, clear and concise lab reports
5. Maintain a laboratory notebook
6. Be able to analyze data and draw a complete conclusion.

- **Major Course Competencies**

Lab 1. Spectrophotometric Determination of Cholesterol in Food.

Lab 2. Determination of Dipeptides in Aspartame. A Paper Chromatographic determination of dipeptides present in the artificial sweetener, aspartame.

Lab 3. DNA Digestion by Restriction Enzyme. Lambda DNA will be digested by three different enzymes to produce DNA fragments. The resulting fragments are subjected to agarose gel electrophoresis.

Lab 4. DNA transformation. Transform E. Coli bacteria with a gene from the bioluminescent jellyfish *Aequorea victoria*. The bacterium transformed carry the gene that encodes for **green fluorescent protein** (GFP) which when grown in the presence of arabinose, makes the bacteria fluoresce a brilliant green.

Lab 5. DNA transformation continued. Analysis

- **Organization & Requirements**

1. Complete all 4 experiments.
2. **There will be no lab make up this quarter. A missed experiment is 20% of your grade.**
3. Experiments will be performed in-groups of no more than 2 students unless otherwise instructed
4. A lab notebook is required for the course. All notes must be written in the notebook, not on loose pieces of paper. Write in **pen** only.
5. The pre-lab assignment for each of the five experiments is to write the objective of the experiment and to **summarize** the procedure in a pictorial flow chart form. The purpose of this exercise is to allow you to understand the procedure clearly and to ensure your preparedness. **Prelab assignments will be checked at the beginning of each lab period.** You will not be allowed to start the lab until prelab assignment is completed.
6. **Lab reports and questions are due the following Friday after completion of the experiment. Hard copies must be turned by 1:00 PM in a folder setup in the rack outside the lab services office. DO NOT TURN IN YOUR REPORT IN MY MAIL BOX IN THE FACULTY SERVICES. Lab reports can also be turned via email as a word document at tcabas@sccd.ctc.edu. A 10-point deduction per week will be applied for late report. Lab reports can be turned in by email as word**

attachment or fax before the due date. Only one (1) lab report is required per **pair if done collaboratively. Individual report may be turned also.**

- **Instructional Philosophy**

The experiments this quarter are involved and require preparation prior to its performance. Make sure that you check the web site for additional information and lab notes. The information at the latest will be posted by Thursday afternoon.

- **Pre-requisite Knowledge**

1. Biochem Lab I.
2. Instructional Materials and Resources
3. Lab procedures will be handed out.

- **Evaluation with Criteria for Passing and Remediation**

Your lab grade will be based on the following

Prelab assignment	10 points each
Formal lab reports and questions* (performance)	100pts each (50% laboratory performance)
Notebook	10 total

*Laboratory performance will be an evaluation of lab technique, lab preparedness, lab etiquette; which includes cleaning after oneself, keeping track of lab glassware, putting away chemicals, effort given to make for a successful experiment, and most important, following safety instructions. Courtesy to lab instructor and classmates is expected.

Grading will be as follows:

95-100%	A
90-94.9	A-
87-89.9	B+
83-86.9	B-
80-82.9	B
77-79.9	C+
73-76.8	C

LAB NOTEBOOK

RECORD ALL INFORMATION GATHERED FROM THE EXPERIMENT IN YOUR LAB NOTEBOOKS.

FORMAL LAB REPORTS

Word process the formal lab reports. Lab reports will contain the following information. Follow the format on the sample lab report for the formal lab report.

Each pair needs only **one** report to turn in if work is done collaboratively.

Introduction -

Provide a short informative paragraph about the chemical being evaluated and how it is used. Include information that describes the practical application of the compound or procedure in question. **The last sentence of the introduction is a statement of the objective or problem to be solved.** There may be more than one objective for each experiment.

Data

Report data in table form. Calculations, graphs, tables, spectra and chromatograms are part of the data and must be included in the report.

Result and Discussion

Describe the procedure briefly and the results of your experiment. Example: If you separated compounds, tell how it was done. If you synthesized a compound, tell how it was made and in what yield. Refer to your data. Discuss unusual observations, errors and anything that will better **your** understanding of the principles involved. Make suggestions that would solve the stated problems. Make this section brief and concise.

Conclusion

A brief statement to answer the problem posed in the objective.

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**Please note: Dress code will be strictly enforced this quarter.
STUDENTS WEARING OPEN TOED SHOES OR SANDALS, SHORTS,
CROPPED SHIRTS OR HALTERS WILL NOT BE ALLOWED IN THE
LAB!**

WEEK	DATE	TOPIC
1,2	4/11, Sec A,B 4/18, Sec C,D	Isolation and Quantification of Cholesterol
3,4	4/25, Sec A,B 5/2 Sec C,D	Aspartame, The Study of Dipeptide Bonds
5,6	5/9, Sec A,B 5/16 Sec C,D	Restriction Enzyme
7,8	5/23, Sec A,B 5/30, Sec C,D	Bacterial Transformation
9,10	5/30, Sec A,B 6/6, Sec C,D	Finish Bacterial Transformation