

Date: Spring 2007

- I. Course Name:** Biotechnology Module I: Spectrophotometric Techniques
Prefix and Number: BIO 281/CHM261
Credit Hours and Contact Hours: 1 credit hour – 3 contact hours
Course Description:

A laboratory module introducing the student to techniques for quantitative visible and ultra violet spectrophotometry.

II. COURSE OBJECTIVES

The broad objective of the course is to familiarize the student with techniques in spectrophotometry.

The following represent specific objectives for the course:

1. To familiarize the students with proper measuring techniques and lab report writing.
2. To develop an understanding for Beer's Law and standard curves.
3. To learn the proper operation of the visible spectrophotometer (Jasco Spectrophotometer).
4. To learn the proper operation of the P&E Lambda-5 U.V. Spectrophotometer.

III. METHODS OF INSTRUCTION

- Handouts on principles and operation of each piece of equipment is provided.
- Operation manuals for each unit are available to students.

Methods of Evaluation

The student will be evaluated using three mechanisms:

1. One test on principles of spectrophotometry.
2. Laboratory reports are due.
3. Final laboratory practical examination: each student will demonstrate operation of Jasco Spectrophotometer and Lambda-5 u.v.-vis spectrophotometer.

VI. COURSE OUTLINE

1. Introduction to the Bausch & Lomb Spec 70.
2. Beer's Law
3. Writing a lab report.
4. Glassware and measuring concepts.
5. Phosphate analysis
6. Protein analysis (Lowry)
7. U.V. spectrophotometry principles.
8. Operation of Perkin-Elmer Lambda-5.
9. Multicomponent Analysis
10. Lab final.