

GEORGIA PERIMETER COLLEGE
DIVISION OF SCIENCE
COMMON COURSE OUTLINE
Revision Date: November 2000

COURSE ABBREVIATION	BIOL 2107L
CREDIT HOURS	1 Semester Hour
COURSE TITLE	Principles of Biology I Laboratory
PREREQUISITES	CHEM 1211 and CHEM 1211L, each with a "C" or better.
COREQUISITE	BIOL 2107

CATALOG DESCRIPTION

This is an in-depth laboratory which applies the scientific method in studying cell structure and function, classical and molecular genetics, and the diversity and unifying characteristics of organisms including bacteria, protists, fungi, and plants. This course is designed for students whose program of study is science.

EXPECTED EDUCATIONAL RESULTS

As a result of completing this course, the student will be able to:

1. Design and perform scientific experiments as well as analyze and interpret results and present written discussions.
2. Use laboratory skills and techniques such as: microscopy, chromatography, electrophoresis, PCR, culture of organisms, spectrophotometry, and statistical and graphing techniques.
3. Use observational skills that allow them to identify and diagram characteristics of organisms based on examples provided by living organisms, models, and microscope slides.

GENERAL EDUCATION OUTCOMES

- I. This course addresses the general education outcome relating to communications as follows:
 1. Students develop their reading comprehension skills by reading lab exercises and handout materials. Students are required to write prelab flowcharts based on this reading.
 2. Students develop their listening skills through pre- and postlab discussion as well as by working in small group discussions as they perform experiments.
 3. Students develop their reading and writing skills through writing lab reports and maintaining a lab notebook.
- II. This course addresses the general education outcomes of mathematical concept usage and applies the scientific method as follows:
 1. Students use measurements in microscopy to determine size of specimens.
 2. Students use Chi square analysis in genetics problems.

3. Students must graph and analyze data obtained by experimentation.
 4. Students apply the scientific method for each laboratory exercise.
- III. This course addresses the general education outcome relating to problem-solving and critical thinking skills as follows:
- Students work in small groups to solve experimental problems posed by the course content.

COURSE CONTENT

- I. Scientific Method
- II. Organic Molecules
- III. Microscope and Cell Structure
- IV. Cell Transport
- V. Enzymes
- VI. Photosynthesis
- VII. Respiration
- VIII. Genetics
 - A. Fruit Fly Genetics
 - B. Cell Division
 - C. DNA Electrophoresis
 - D. Genetic Control of Cell Chemistry
 - E. DNA Amplification (PCR)
- IX. Diversity
 - A. Monerans
 - B. Protists
 - C. Fungi
 - D. Plant Phylogeny
 - E. Plant Structure

ASSESSMENT OF EXPECTED EDUCATIONAL RESULTS

A. COURSE GRADE

Midterm and final exams prepared by individual instructors as well as lab reports will be used to determine the course grade. Exams will be part practical and part written in content. Lab notebooks used to record purpose, procedures, results and conclusions will determine part of the lab course grade.

B. DEPARTMENTAL ASSESSMENT

Biol 2407L will be assessed every three years as a part of the Biology Program of Study assessment.

C. USE OF ASSESSMENT FINDINGS

Instructors will consult the assessment results and each other to determine which educational approaches are working well, and which could be improved. They will continue what works and explore improved approaches to instruction where that is needed.

EFFECTIVE DATE: November 2000

APPROVED DATE: November 2000

REVIEW DATE: April 2005