

GEORGIA PERIMETER COLLEGE
DIVISION OF SCIENCE
COMMON COURSE OUTLINE
Revision Date: April 2005

COURSE ABBREVIATION	BIOL 1407L
CREDIT HOURS	1 Semester Hour
COURSE TITLE	Plants, People and the Environment Laboratory
PREREQUISITES	Exit or exemption from Learning Support English, reading, and ESL requirements.
COREQUISITE	BIOL 1407

CATALOG DESCRIPTION:

This is a lab course designed for non-science students to be taken as a required science elective. The course uses hands-on laboratory experiences to support topics covered in the lecture portion of the course. Emphasis is placed on the use of the scientific method and use of investigative techniques to explore plant physiology, anatomy, and ecology.

GENERAL COURSE OBJECTIVE

Allow students to develop laboratory skills and techniques by performing experiments requiring analysis and interpretation of data.

EXPECTED EDUCATIONAL RESULTS

Upon completion of BIOL1407L students will be able to:

1. Demonstrate proficiency with basic laboratory techniques including use of the scientific method to design and conduct a controlled experiment, analyze data, and arrive at a conclusion, as well as use of the compound light microscope.
2. Identify major crop plants and other economically important uses for plants such as paper, wood, dyes, and spices.
3. Identify major groups of plants, the various stages of the plant life cycle, and adaptations for life on land present in plants.
4. Identify types of plant cells, tissues, and organs and know their functions.
5. Understand major physiological processes in plants including photosynthesis, respiration, transpiration, mitosis, effect of hormones and plant nutrition.
6. Be able to apply the laws of Mendelian genetics to interpret data from genetic crosses using plants.
7. Understand the interactions between plants and other organisms in the ecosystem.

GENERAL EDUCATION OUTCOMES

- I. This course addresses the general education outcome relating to communications as follows:
 - A. Students will develop reading comprehension skill by reading the text, handout materials, and published articles as assigned.
 - B. Students will develop listening skills through lecture, small group collaborative activities, and videos and/or guest lectures.
 - C. Students will develop reading and writing skills through the use of exercises and test questions that will require them to read and respond to ideas appropriately.
- II. This course addresses the general education outcome relating to usage of mathematical concepts and applies the scientific method as follows:
 - A. Students must apply mathematical concepts in the solution of genetics problems provided to demonstrate the laws of genetics and the prediction of outcomes of genetic crosses.
 - B. Students will apply the scientific method as they learn to analyze data and determine the validity of conclusions supported by data.

COURSE CONTENT

- I. Laboratory techniques
 - Scientific method
 - Introduction to microscope
- II. Economic importance of plants
 - Plants as food
 - Non-food usages of plants
- III. Plant evolution & diversity
 - Survey of plant diversity
 - Fungi
- IV. General plant anatomy & physiology
 - Introduction to plant cell & osmosis
 - Plant anatomy & tissues
 - Photosynthesis and respiration
 - Transpiration
 - Plant nutrition
 - Plant hormones
 - Plant propagation
- V. Plant reproduction and genetics
 - Mitosis and meiosis
 - Genetics
 - Organic molecules
- VI. Plants and their place on earth
 - Plant ecology

ASSESSMENT OF EXPECTED EDUCATION OUTCOMES

A. COURSE GRADE

Each instructor, according to the guidelines presented in the instructor course syllabus will determine the student's grades. Methods may include quizzes, practical tests, & projects or other assignments as developed by the instructor.

B. DEPARTMENTAL ASSESSMENT

Biol 1407L will be assessed by regular consultation between instructors and other members of the Transfer Biology Committee.

An assessment test will be administered to all students enrolled in Biol 1407L every five years. Portfolio assessment of students' writing on final exams may be included in the assessment process.

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: May 2005
REVIEW DATE: April 2005

APPROVAL DATE: April 2005