

GEORGIA PERIMETER COLLEGE
DEPARTMENT OF SCIENCE
COMMON COURSE OUTLINE
Revised Date: November 2000

COURSE ABBREVIATION	BIOL1913L
CREDIT HOURS	1 Semester Hour
COURSE TITLE	Microbiology Laboratory
PREREQUISITE	BIOL 1612 and BIOL 1612L, each with a "C" or better.
COREQUISITE	BIOL 1913

CATALOG DESCRIPTION

This is a laboratory with experiments in microbial culture and staining techniques, cell metabolism, disinfection, and sterilization. Isolation of some normal flora and a survey of parasites are included.

EXPECTED LABORATORY EDUCATIONAL RESULTS

After successfully completing this laboratory course the student should be able to:

1. practice aseptic technique and demonstrate an understanding of all laboratory safety rules
2. apply the Scientific Method in working out laboratory exercises.
3. demonstrate the ability to use efficiently all powers of magnification of the compound light microscope.
4. demonstrate the ability to perform bacteriologic stains and prepare slides for viewing under the compound light microscope.
5. interpret stained microscope slides to evaluate microorganism morphology, arrangement and structures to determine certain characteristics of these organisms.
6. understand the ubiquity of microorganisms and techniques to isolate and grow these organisms.
7. use and interpret biochemical test to help identify bacteria and bacterial metabolism.
8. practice various techniques of microbial control including sterilization, disinfection, antimicrobial therapy, and stressing aseptic technique.
9. demonstrate the correct technique for obtaining and handling of specimens to transport them to the laboratory for characterization.
10. recognize and understand the medical importance of certain fungal, protozoan, and parasitic worm pathogens.
11. recognize pathogenic organisms and relate them to signs and symptoms of the diseases they cause.

GENERAL EDUCATIONAL OUTCOMES

I. OUTCOME: "The student should be able to recognize and apply scientific inquiry in a variety of settings." Any principle that the student is asked to employ in Microbiology Laboratory demands that they have the ability to manipulate laboratory apparatus, handle potentially hazardous microorganisms, design experiments, gather data, and make conclusions in the form of oral or written reports.

II. OUTCOME: "The student should be able to communicate effectively through listening, reading, writing and speaking."

<u>Skill</u>	<u>Method</u>
A. Listening	Note taking during laboratory preparation lectures
B. Reading	Preparation for the laboratory Use of reference materials outside of laboratory
C. Writing	Writing laboratory reports Writing for lab quizzes and examinations Preparation of flow charts in the identification of an unknown bacterial culture
D. Speaking	Note taking during laboratory preparation sessions Working with others collaboratively on laboratory exercises

COURSE CONTENT: The sequence may be changed by each campus or instructor

- Laboratory Safety Rules and Procedures
- Microscopy
- Staining Methods
- Cultivation of Bacteria
- Microbial Metabolism
- Microbial Growth
- Control of Microbial Growth
- Microbial genetics and biotechnology
- Immunology
- Microbiology and the environment
- Microorganisms and disease

ASSESSMENT OF EXPECTED EDUCATIONAL RESULTS

A. COURSE GRADE

1. The individual student will be evaluated by each instructor as defined by the individual instructor's syllabus for that quarter. Methods of evaluation may include quizzes, tests, projects or research papers or homework that is developed by each instructor. Evaluation efforts are designed to assess the student's knowledge of the scientific method as it would be applied to the field of medical microbiology. These assessments will also evaluate the student's listening, reading, writing, interpretation, speaking and laboratory manual dexterity skills.
2. There will be two major practical tests counting at least 40% of the total grade.
3. Certain practical exercises will be used to assess specific microbiology laboratory techniques. The results of these exercises will be reviewed by the instructor to ensure student competence.
4. It will be strongly recommended that writing assignments and discussion questions be included in the overall evaluation of the students progress in order to conform to Georgia Perimeter College's commitment to Writing Across the Curriculum.

B. DEPARTMENTAL ASSESSMENT

This course is part of the Nursing, Dental Hygiene, and Physical Education programs and will be addressed in their program assessments. Biol 1913L will be assessed by regular consultation between instructors and other members of the Microbiology Committee and Nursing, Dental Hygiene, and Physical Education faculty.

C. USE OF THE 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