Bossier Parish Community College
Master Syllabus

Course Prefix and Number: BLGY 206 L **Credit Hours:** 1

Course Title: Principles of Microbiology Lab

Course Prerequisites: Successful completion of or current enrollment in BLGY 206 or an equivalent course

Textbooks: BPCC BLGY 206 Lab Manual

Course Description:

Laboratory activities to accompany BLGY 206 lecture. Topics covered include microbial diversity, structure and function, physiology, and genetics. Laboratory studies emphasize groups of microbes, techniques used in their handling and control, immunology, and characteristics of some pathogenic microbes.

Learning Outcomes:

At the end of this course, the student will

A. demonstrate aseptic techniques when handling microbial cultures; and
B. utilize basic microbiological laboratory equipment and methods correctly to generate and analyze laboratory-generated data.

To achieve these outcomes, the student will

1. use aseptic techniques needed to handle microorganisms. (A,B)
2. use appropriate hand-washing techniques. (A)
3. use the microscope. (A,B)
4. identify representative protozoans, fungi, cyanobacteria, true bacteria, and algae. (B)
5. perform basic bacteriological transfer procedures. (B)
6. handle bacterial cultures aseptically in the preparation of bacterial smears. (A,B)
7. gram stain student-prepared smears and examine them using the oil immersion objective. (B)
8. recognize bacterial capsules and flagella. (B)
9. identify types of bacterial flagellation. (B)
10. perform and recognize an endospore stain. (B)
11. distinguish among true motility, water current movement, and Brownian movement. (B)
12. perform both streak plate, pour plate, and spread plate techniques. (B)
13. recognize the difference between a pure culture and an isolated colony. (B)
14. distinguish plates, slants, and broth as routinely used forms of culture media. (A,B)
15. analyze the effects of hypertonic salt conditions on various bacteria. (D)
16. apply basic mathematics and graphing to make dilutions and calculate numbers of microbes. (B)
17. use dilution concepts to perform a virus plaque assay. (B)

18. identify bacteria in pure culture using colony morphology, cell morphology, stains, and biochemical test results. (B)
19. compare the advantages and disadvantages of the API multitest system. (B)
20. perform tests to identify various staphylococci and streptococci. (B)
21. use a dichotomous flow chart to identify enteric and urinary tract pathogens. (B)
22. identify the five major classes of leukocytes from prepared slides. (B)
23. perform and/or demonstrate selected serological tests. (B)
24. summarize basic methods used to manipulate DNA. (B)
25. employ critical thinking skills to analyze biochemical test results and identify unknown bacteria. (B)
26. orally communicate clearly and with appropriate terminology the results of a lab experiment. (B)

Minimum Course Requirements
To earn a grade of "C" or higher the student must earn 70% of the total points for the course and meet all of the following course requirements.

- minimum average of 65% on laboratory quizzes and the identification of bacteria activity
- satisfactory performance of a minimum of 25 assigned microbiology laboratory exercises
- minimum average of 65% on laboratory tests

Course Grading Scale:

A- 90% or more of total possible points and meet all minimum course requirements

B- 80% or more of total possible points and meet all minimum course requirements

C- 70% or more of total possible points and meet all minimum course requirements

D- 60% or more of total possible points and meet all minimum course requirements

F- less than 60% of total possible points or failure to meet one or more of the minimum course requirements

Attendance Policy: The college attendance policy is available at http://catalog.bpcc.edu/content.php?catoid=5&navoid=369#class-attendance

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, certification exams and/or clinical fees.

Nondiscrimination Statement

Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual

orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

COORDINATOR FOR SECTION 504 AND ADA
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Equity/Compliance Coordinator
Teri Bashara, Director of Human Resources
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Reviewed: E Cox, April 2022