

Date Adopted: 1965  
Date Reviewed: 1988  
Date Revised: 1994, 1998, 2001



# Alabama Department of Postsecondary Education

## ***Representing Alabama's Public Two-Year College System***

### **Jefferson State Community College**

<b><u>BIO 220</u></b>	<b><u>GENERAL MICROBIOLOGY</u></b>	<b><u>BIO 103 OR APPROPRIATE SCORE ON</u></b>
<b>Prefix No.</b>	<b>Course Title</b>	<b><u>BIOLOGY PLACEMENT EXAM AND A</u></b>
		<b><u>COLLEGE-LEVEL CHEMISTRY</u></b>
		<b>Prerequisite</b>

**CREDIT HOURS: 4      CONTACT HOURS: LECTURE 2 LAB 4**

#### **I.      COURSE DESCRIPTION**

This course covers fundamental principles of microbiology including history of microbiology, cell structure, and function, microbial genetics, infectious diseases, and immunity. Emphasized topics are the distribution, physiology, culture, identification, classification, and role in nature and medicine, and disease control of microorganisms.

#### **II.     GENERAL COMPETENCIES**

- A.    To enable the student to develop the ability to characterize microorganisms and to understand their function in various environments.
- B.    To enable the student to comprehend the sources of microorganisms and various relationships to man and the environment.
- C.    To enable the student to understand the basis of infection, disease, control of microorganisms, and the body's defenses against infection.
- D.    To enable the student to understand the importance of metabolism and genetics in microorganisms.

#### **III.    COURSE OBJECTIVES**

- A. To enable the student to develop the ability to characterize microorganisms and to understand their function in various environments
  - 1. The student will compare the major groups of microorganisms on the basis of structure and examples
  - 2. The student will compare procaryotic and eucaryotic cells on the basis of structure and function
  - 3. The student will discuss and apply methods of observing, staining and culturing microorganisms
  - 4. The student will discuss the effect of microorganisms on the environment
- B. To enable the student to comprehend the sources of microorganisms and various relationships to man and the environment
  - 1. The student will discuss selected historical events and their relationship to microbiology
  - 2. The student will explain the relationship in various ecological situations including normal flora, infection, food poisoning, agricultural effects and biochemical cycles.
- C. To enable the student to understand the basis of infection, disease, control of organisms, and the body's defenses against infection.
  - 1. The student will define concepts of infection and microbial control.
  - 2. The student will discuss the body's non-specific and specific defenses against infection.
  - 3. The student will discuss the relationship between immunity and allergy
- D. To enable the student to understand the importance of metabolism and genetics in microorganisms.
  - 1. The student will describe concepts of metabolism including enzyme activity.
  - 2. The student will explain microbial genetics.
  - 3. The student will be able to explain the role of metabolism and genetics in the control of microorganisms, industry and agriculture

#### **IV. CLASS ACTIVITIES**

- A. Lecture
- B. Demonstration
- C. Discussion
- D. Use of microbiological techniques
  - 1. Use and care of microscope
  - 2. Staining techniques
  - 3. Culture media
  - 4. Isolation of pure cultures of microorganisms
  - 5. Growth and variation of microorganisms
  - 6. Identification of unknown bacteria

#### **V. CRITERIA FOR EVALUATION**

The student will have demonstrated attainment of the general course competencies if he accumulates a total of 70 percent of the points possible from the following criteria:

- A. Participation in laboratory and class activities
- B. Laboratory Reports/Class Homework
- C. Written examinations
- D. Final examinations

**VI. ATTENDANCE**

Students are expected to attend all classes for which they are registered. Students who are unable to attend class regularly, regardless of the reason or circumstance, should withdraw from that class before poor attendance interferes with the student's ability to achieve the objectives required in the course. Withdrawal from class can affect eligibility for federal financial aid.

**VII. STATEMENT ON DISCRIMINATION/HARASSMENT**

The College and the Alabama State Board of Education are committed to providing both employment and educational environments free of harassment or discrimination related to an individual's race, color, gender, religion, national origin, age, or disability. Such harassment is a violation of State Board of Education policy. Any practice or behavior that constitutes harassment or discrimination will not be tolerated.

**VIII. AMERICANS WITH DISABILITIES**

The Rehabilitation Act of 1973 (Section 504) and the Americans with Disabilities Act of 1990 state that qualified students with disabilities who meet the essential functions and academic requirements are entitled to reasonable accommodations. It is the student's responsibility to provide appropriate disability documentation to the College. The ADA Accommodations office is located in FSC 300 (205-856-7731).