

SYLLABUS
PART I
EDISON COMMUNITY COLLEGE
BIO 241S MICROBIOLOGY LABORATORY
1 CREDIT HOUR

COURSE DESCRIPTION

Exploration of the ubiquitous nature of microbes. Students perform laboratory techniques to identify microorganisms with emphasis on the methodology and clinical relevance of the procedures. Various forms of environmental control for bacteria are observed. Concurrent enrollment in BIO 240S is required. Lab fee.

COURSE GOALS

The student will:

Bloom's Level		Gen Ed Outcomes
3	1. Discover the ubiquitous nature of microorganisms.	2, 5, 6
2P	2. Perform several staining techniques including the simple stain, negative stain, as well as differential stains, e.g., the Gram stain, spore stain and acid-fast stain.	2, 5, 6
3P	3. Master aseptic techniques.	1, 2, 5, 6
1	4. Identify pure culture techniques for isolating bacteria.	2, 5, 6
5	5. Test the metabolic end-products of microorganisms as means of identification.	2, 5, 6
2P	6. Complete experiments utilizing different physiological characteristics of bacteria.	2, 3, 5, 6
5	7. Test the effects of antiseptics and disinfectants on microbial growth.	1-6
5	8. Test and measure the effects of antibiotics on various bacteria.	1-6
4	9. Analyze the influence of temperature, pH or UV light on bacterial growth.	2, 3, 5, 6
5	10. Assess the effects of hand washing on synthetic epidemic.	1-6
4	11. Analyze the student's susceptibility to dental caries.	2, 5, 6
2	12. Describe what is involved in bacterial population counts in the food, water and milk industries. A sample population count will be produced by each lab group.	1-6

CORE VALUES

The Core Values are a set of principles that guide in creating educational programs and environments at Edison. They include communication, ethics, critical thinking, human diversity, inquiry/respect for learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

TOPIC OUTLINE

1. Lab Safety and Microscopy
2. Pure Culture and Aseptic Techniques
3. Preparation and Types of Media
4. Smear Preparation and Staining Methods
5. Gram Staining and Its Importance
6. Special Staining
7. Identification Using Physiological Characteristics
8. The Enterotube II and Other, Newer Methods
9. Control of Bacterial Growth, Mechanically and Medically
10. The Snyder Caries Susceptibility Test
11. Effectiveness of Hand Scrubbing
12. Bacterial Population Counts in Food
13. Non-Bacterial Pathogens of Man