

SYLLABUS  
PART I  
EDISON COMMUNITY COLLEGE  
MLT 245S CLINICAL MICROBIOLOGY & PARASITOLOGY  
4 CREDITS

**COURSE DESCRIPTION**

Comprehensive study of diagnostic microbiology. Proper recovery and handling of specimens, growth requirements and identification of organisms is covered. Media selection, isolation techniques, staining and microscopic procedures are covered as well as antibiotic susceptibility testing for clinically significant organisms. Topics in virology, mycology and parasitic life cycles and host-parasite interaction are covered. Prerequisite: MLT 121S with grade of “B” or better and acceptance into MLT program. Lab fee.

**COURSE GOALS**

The student will:

Bloom's Level		Program Outcomes
2	1. Describe the role of the Microbiology lab and explain proper handling and examination of specimens.	2, 7
1	2. List types of sterilization and disinfection methods and associated principles of infection control.	5
1	3. Identify hazards and know safety precautions in the micro lab.	5
2	4. Explain culture collection procedures and causes of specimen rejection for specific sites.	1, 2, 3
3	5. Collect a throat culture without contaminating the specimen.	1,3
3	6. Streak a plate with a microbiology specimen onto appropriate media according to source.	1,3
3	7. Pick one colony type from plate of growth and make a slide for gram staining.	1-4
3	8. Perform a gram stain suitable for determination of gram reaction and morphology of bacteria.	1-4
2	9. Describe basic principles of bacteriology, mycology, parasitology and virology.	1
3	10. Determine growth media choices dependant upon specimen source.	1
4	11. Compare different types of media and their respective uses (e.g. nutrient, selective, differential)	1
2	12. Explain biochemical test reactions and their use in identification of microbes.	1
4	13. Compare methods of antimicrobial susceptibility testing and classify different antimicrobials.	1
1	14. List and identify clinically significant microbes.	1
2	15. Explain pathogenicity of clinically significant microbes.	1
2	16. Discuss structure, characteristics and the life cycle of viruses.	1
4	17. Analyze lab data (QC, source and biochemical test results) to determine the pathogen and choice of antibiotic.	1, 2, 4
2	18. Explain how quality control is used in the micro lab.	2, 4

1	19. List types of specimens appropriate to identify parasites.	1, 3
3	20. Articulate the life cycles, clinical manifestations, and endemic areas of significant parasites.	1
3	21. Determine selected parasites when given case history and slides or color plates.	1
3	22. Report the collection, handling, causes of rejection and examination of specimens for fungal identification.	1, 3, 4
4	23. Determine and perform biochemical tests needed to identify unknown organisms.	1
4	24. Analyze test reactions, gram reaction, microscopic appearance, media growth, source and case study information to determine organism.	1
3	25. Demonstrate professionalism in the health care field including ethics, dress code, and HIPAA.	6,8

### CORE VALUES

The Core Values are a set of principles which 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 those core values whenever appropriate.

### TOPIC OUTLINE

1. Micro lab safety, cleansing, QC
2. Sources/types of specimen
3. Basic principles of microbiology
4. Media
5. Identification of microbes using biochemical reactions and various test methodologies
6. Antibiotic classification and antibiotic susceptibility testing
7. Parasitology
8. Virology
9. Mycology