Common Course Outline

MLTC *201*

Clinical Microbiology

Four Semester Hours

The Community College of Baltimore County

Description

MLTC *201* – Four credits - Clinical Microbiology
studies the clinical aspects of infectious diseases, including bacteriology, mycology, parasitology, and medical virology. The course includes specimen collection and handling, normal flora, and expected pathogens for various regions of the body. The course also examines the pathogenesis, clinical syndromes, epidemiology, treatment, and laboratory identification of each microorganism. Laboratory emphasizes the performance and interpretation of appropriate tests used to identify commonly encountered microorganisms in the clinical microbiology laboratory. 2 lecture hours per week, 6 laboratory hours per week. Prerequisites: BIOL 230, CHEM 146/147, ENGL 101, and MLTC 101.

Overall Course Objectives

Upon completion of this course, students will be able to:

1. compare and contrast the transmission, pathogenesis, and epidemiology of infectious bacterial, fungal, viral, and parasitic diseases;
2. describe the collection and handling methods of specimens for the diagnosis of infectious diseases;
3. explain the principles and methodologies of diagnostic tests performed in the clinical laboratory for the identification of infectious agents;
4. perform and accurately interpret basic clinical laboratory tests used for the identification of infectious agents;
5. recognize factors that affect procedures and results;
6. correlate symptoms, risk factors, medical history, and laboratory data to diagnose infectious diseases;
7. evaluate quality control procedures used in a clinical microbiology laboratory; and
8. demonstrate laboratory safe practices handling biohazardous materials and waste.

Major Topics

I. Microbiology
   - A. Bacterial Cell Structure, Physiology, Metabolism, and Genetics
   - B. Control of Microorganisms
   - C. Antimicrobial Therapy
   - D. Emerging Technologies

E. Infectious Processes
F. Laboratory Identification of Significant Organisms
1. Staphylococci
2. Streptococci
3. Non-spore-Forming Gram Positive Rods
4. Gram-Negative Aerobic Diplococci
5. Enterboacteriaceae
6. Other Gram-Negative Rods
7. Anaerobes
8. Chlamydia, Mycoplasma, and Ureaplasma
9. Mycobacteria

II. Mycology
III. Diagnostic Parasitology
IV. Clinical Virology

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member, but, at minimum, will include the following:

Weekly Quizzes
4 Exams
Weekly Lab Exercises
Identification of Five Unknown Organisms
Five Case Studies
Comprehensive Final Exam
Final Laboratory Proficiency Evaluation

Other Course Information

This course is a Medical Laboratory Technology program core course.