

**Course Description****MLT2403L | Clinical Microbiology Lab 2 | 2.00 credits**

This course is designed to complement the Microbiology 2 lecture and provide students with the necessary knowledge base and laboratory skills to effectively identify microorganisms associated with infectious diseases.

**Course Competencies:**

**Competency 1:** The student will demonstrate knowledge and application of microscope usage for reading Gram stain by:

1. Stating the parts and demonstrating the proper usage and care of the microscope
2. Performing and interpreting Gram stains from solid and liquid media
3. Reading Gram stains from known and unknown cultures to aid in organism identification

**Competency 2:** The student will demonstrate knowledge and application of bacterial organisms found in the upper and lower respiratory tract, urine, blood, genital tract, wounds and body fluids by:

1. Stating ingredients and function of media used to identify aerobes
2. Recovering isolated bacterial colonies from test samples by streaking for isolation using a mechanical device such as disposable plastic or wire loop
3. Differentiating pathogenic microorganisms from indigenous flora
4. Visually inspecting cultures for purity prior to inoculating to media
5. Manually transferring bacterial colonies to biochemical media for observation and identification
6. Interpreting biochemical reactions for accurate manual and automated identification
7. Identifying bacterial organisms found in the upper and lower respiratory tract, urine, blood genital tract, wounds and body fluids

**Competency 3:** The student will demonstrate knowledge and application of some of the most commonly encountered clinical anaerobic organisms by:

1. Stating and demonstrating the proper incubation requirements/techniques for anaerobic organisms
2. Stating the proper media and functions for selectively identifying anaerobes
3. Recognizing anaerobes based on their staining and biochemical characteristics
4. Isolating and identifying the most commonly encountered clinical anaerobic organisms

**Competency 4:** The student will demonstrate knowledge and application of identification and susceptibility methods used in the clinical laboratory by:

1. Preparing bacterial suspension for identification and susceptibility testing
2. Stating the principles of the blood culture instrumentation
3. Assessing and experimenting with manual and automated instrumentation for bacteria identification and susceptibility
4. Interpreting susceptibility testing results
5. Practicing and documenting quality control procedures

**Learning Outcomes:**

- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Demonstrate an appreciation for aesthetics and creative activities