

# MEDICAL LABORATORY TECHNOLOGY (MLT)

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## **MLT-100 Phlebotomy**

### **2 Credits**

**Lecture:** 2 hours per week

**Offering:** Spring Only, All Years

This course presents the theory and procedures for the practice of phlebotomy and waived laboratory testing as it applies to medical laboratory personnel. Phlebotomy and laboratory quality control measures for specimen collection in healthcare facilities will be emphasized throughout this course.

**Pre/Corequisites:** MLT-124

## **MLT-112 Urinalysis and Other Body Fluids**

### **2 Credits**

**Lecture:** 2 hours per week

**Offering:** Fall Only, All Years

This course is an introduction to the study of urine and body fluid analysis. It includes the anatomy and physiology of the kidney, physical, chemical, and microscopic examination of urine, cerebrospinal fluid, and other body fluids as well as quality control, quality assurance, and safety. Fundamental principles of urine and body fluid analysis with correlation of laboratory methods and practice will also be covered.

**Corequisites:** MLT-224

## **MLT-124 Medical Lab Fundamentals**

### **3 Credits**

**Lab:** 9 hours per week

**Offering:** Spring Only, All Years

This course is an introduction to procedures used in the medical laboratory. Students will learn the application of basic techniques and instruments used in all areas of medical laboratories.

These correlate with core MLT courses to include activities for phlebotomy, waived testing, urinalysis, hematology, chemistry, immunology, blood banking and microbiology.

**Pre/Corequisites:** MLT-100 or MAST-100, MLT-214, MLT-222

## **MLT-214 Hematology and Hemostasis**

### **4 Credits**

**Lecture:** 4 hours per week

**Offering:** Spring Only, All Years

This course involves the study of blood cells in peripheral blood, bone marrow, and other body fluids. Concepts of normal and abnormal blood cell maturation, physiology, and morphology are examined as well as hemostasis (coagulation). The course is intended to be an introduction to routine laboratory methods and instrumentation with correlation of laboratory observations with disease conditions.

**Corequisites:** MLT-124

## **MLT-218 Medical Lab Chemistry**

### **4 Credits**

**Lecture:** 4 hours per week

**Offering:** Summer Only, All Years

This course is an introduction to the basic theory and diagnostic procedures in medical chemistry. Basic principles and theory of biochemical and analytical tests and procedures used in the analysis of clinical specimens will be covered. This course emphasizes the correlation of specimen processing as well as analysis of test results and quality control data.

**Corequisites:** MLT-225

## **MLT-220 Medical Microbiology**

### **5 Credits**

**Lecture:** 5 hours per week

**Offering:** Fall Only, All Years

This course introduces basic practices and principles of diagnostic microbiology, focusing on pathogenic bacteria encountered in the blood, central nervous system, and genitourinary tract. It includes application of common algorithms for identification of clinically significant pathogens including aerobic gram-positive cocci, gram-negative bacilli, gram-negative cocci, gram-positive bacilli, and anaerobes. The course introduces principles and procedures of immunological and molecular diagnostic techniques and their application to the clinical lab.

**Corequisites:** MLT-224

## **MLT-222 Basic Concepts in Transfusion Medicine**

### **4 Credits**

**Lecture:** 4 hours per week

**Offering:** Spring Only, All Years

This course is an introduction to the basic theory and concepts of antigen-antibody reaction as they pertain to blood cell transfusions. Blood group antigens and the genetics of their inheritance are examined. Methods are introduced for performing blood grouping, compatibility testing, and component selection.

**Corequisites:** MLT-124

## **MLT-223 Immunology and Molecular Techniques**

### **3 Credits**

**Lecture:** 3 hours per week

**Offering:** Fall Only, All Years

This course offers an overview of the fundamentals of clinical diagnosis and management of disease by immunological and molecular biology laboratory methods. Normal immune function as well as pathological conditions and application to laboratory testing will be covered.

**Corequisites:** MLT-224

## **MLT-224 Advanced Medical Laboratory Technology Student Lab Practice**

### **3 Credits**

**Lecture:** 9 hours per week

**Offering:** Fall Only, All Years

This course included advanced practice of laboratory skills and procedures to reinforce theory gained in core MLT courses in preparation for clinical internships.

**Pre/Corequisites:** MLT-112, MLT-124, MLT-214, MLT-218, MLT-220, MLT-222, MLT-223, MLT-225

**MLT-225 Parasitology, Mycology and Virology**

**2 Credits**

**Lecture:** 2 hours per week

**Offering:** Summer Only, All Years

This course covers basic theory and clinical procedures used to isolate and identify intestinal, blood, and tissue parasites; dermatophytes, systemic and subcutaneous fungi, viruses, and mycobacteria.

**MLT-250 Capstone Seminar and Exam Review**

**5 Credits**

**Lecture:** 5 hours per week

**Offering:** Spring Only, All Years

This course provides a cumulative review of medical laboratory procedures and theoretical concepts from all phases of laboratory testing. Emphasis is placed on recall and application of theory, correlation, and evaluation of all areas of laboratory science. Upon completion, students should be prepared for national certification examinations. Students will apply their technical knowledge to laboratory case studies and to review major areas of the MLT curriculum with an emphasis on critical thinking skills. Students will have access to practice examination in preparation for certification examinations.

**Pre/Corequisites:** MLT-100, MLT-112, MLT-124, MLT-214, MLT-218, MLT-220, MLT-222, MLT-223, MLT-224, MLT-225, MLT-291, MLT-292

**MLT-291 Internship I**

**4 Credits**

**Internship:** 12 hours per week

**Offering:** Spring Only, All Years

This course provides the first cooperative learning experience in an affiliated clinical facility. Students will gain their first exposure to the clinical environment in a supervised application of learned theory and practice. Students will experience working with patients and performing procedures required of a medical laboratory technician. Specific detailed learning activities are developed to meet established clinical outcomes.

**Pre/Corequisites:** MLT-100, MLT-112, MLT-124, MLT-214, MLT-218, MLT-220, MLT-222, MLT-223, MLT-224, MLT-225

**MLT-292 Internship II**

**4 Credits**

**Internship:** 12 hours per week

**Offering:** Spring Only, All Years

This course provides the final cooperative learning experience in an affiliated clinical facility. Students will complete their internship in a supervised clinical setting and apply learned theory and practice. Students will achieve competencies required of a medical laboratory technician. Specific detailed learned activities are developed to meet established clinical outcomes.

**Pre/Corequisites:** MLT-100, MLT-112, MLT-124, MLT-214, MLT-218, MLT-220, MLT-222, MLT-223, MLT-224, MLT-225, MLT-291