

# MLT

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## Courses

### **MLT 100 Introduction to Medical Laboratory Analysis** **5 Credits. 3 Lecture Hours. 6 Lab Hours.**

A course on equipment and processes of the clinical laboratory and the responsibilities of the Medical Laboratory Technician. Topics include pipetting; spectrophotometry; safety; point of care testing; and the chemical, physical, and microscopic analysis of urine.

Prerequisites: CHE 115 and MAT 151 and MLT Program Chair consent

Instructor Consent Required

### **MLT 121 Hematology and Hemostasis 1** **4 Credits. 3 Lecture Hours. 3 Lab Hours.**

A course on theory and practice of normal hematology and hemostasis. Topics include: hematopoiesis, cell and platelet counts, cell identification, and prothrombin and partial prothrombin times.

Prerequisites: CHE 115 and MAT 151 and MLT Program Chair consent

Instructor Consent Required

### **MLT 122 Hematology and Hemostasis 2** **3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A continuation of MLT 121. Topics include: hematopoiesis and abnormal cell identification, red cell abnormalities, anemias, leukemias, and coagulopathies.

Prerequisites: MLT 121

### **MLT 140 Clinical Chemistry** **4 Credits. 3 Lecture Hours. 3 Lab Hours.**

A course on principles and procedures used in the chemical analysis of clinical specimens. Topics include: manual and automated chemical testing, quality control, and clinical correlations.

Prerequisites: MLT 100 and MLT 121

### **MLT 170 Instrumentation for Medical Laboratory Technicians** **1 Credit. 0 Lecture Hour. 3 Lab Hours.**

A course on principles and procedures for instrumentation used in hematology, hemostasis, urinalysis and clinical chemistry. Topics include: set-up, operation, routine maintenance and quality control procedures for spectrophotometers, particle counters, electrodes, and other automated analyzers.

Prerequisites: MLT 100 and MLT 121

### **MLT 180 Phlebotomy Techniques and Practice for Medical Laboratory Technicians** **2 Credits. 0 Lecture Hour. 6 Lab Hours.**

A course on theory and practice of blood collection used by medical laboratory technicians. Topics include: devices and methods, specimen integrity, communication, and professionalism. Students who develop the necessary skills also practice supervised blood collection at a clinical site.

Prerequisites: MLT 100 and MLT 121

### **MLT 181 Phlebotomy Techniques for MLT** **1 Credit. 0 Lecture Hour. 3 Lab Hours.**

A two-week course on the equipment and techniques used to collect quality specimens for analysis. Topics include: communication with patients and staff, professional conduct, and daily practice of techniques using a model arm.

Prerequisites: MLT 122 and MLT 140

### **MLT 185 Clinical Laboratory Practice** **6 Credits. 0 Lecture Hour. 30 Lab Hours.**

Students apply skills in clinical chemistry, hematology, hemostasis, and urinalysis through on-campus laboratory practice. Students who develop the necessary skills also participate in an internship in these departments at a clinical site.

Prerequisites: MLT 140 and MLT 180

### **MLT 186 Hematology and Hemostasis Applications** **1 Credit. 0 Lecture Hour. 3 Lab Hours.**

Students apply skills in hematology and hemostasis in an on-campus laboratory, performing tasks independently as part of a simulated lab setting. Students must adhere to HPS and MLT Clinical Practice Standards.

Prerequisites: MLT 122 and MLT 170

### **MLT 187 Clinical Chemistry and Urinalysis Applic** **1 Credit. 0 Lecture Hour. 3 Lab Hours.**

Students apply skills in clinical chemistry and urinalysis in an on-campus laboratory, performing tasks independently in a simulated lab setting. Students must adhere to HPS and MLT Clinical Practice Standards.

Prerequisites: MLT 122 and MLT 170

### **MLT 191 Part-Time Cooperative Education 1: Medical Laboratory Technology** **1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their first part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures in order to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: MLT 185 (minimum grade C)

### **MLT 192 Part-Time Cooperative Education 2: Medical Laboratory Technology** **1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their second part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures in order to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: MLT 191 (minimum grade C)

### **MLT 210 Clinical Immunology and Serology** **3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on the function of the immune system, and immunological and serological testing methods performed in clinical laboratories.

Topics include: humoral and cell mediated immunity, hypersensitivity, infectious agents, enzyme immunoassay, immunoelectrophoresis, and basic molecular testing.

Prerequisites: MLT 295

Corequisites: MLT 261 : Clinical Microbiology

### **MLT 250 Immunohematology** **5 Credits. 3 Lecture Hours. 6 Lab Hours.**

A course on theory and application of immunohematology procedures used in the clinical laboratory. Topics include: ABO and Rh, antibody screens and antibody identification, compatibility, enhancement techniques, and automated procedures.

Prerequisites: MLT 185

**MLT 251 Immunohematology****4 Credits. 2 Lecture Hours. 6 Lab Hours.**

A course on the theory of immunohematology, emphasizing laboratory techniques. Topics include: ABO and Rh, antibody screens and identification, compatibility, enhancement techniques, and donor requirements.

Prerequisites: MLT 210

**MLT 252 Immunohematology Applications****1 Credit. 0 Lecture Hour. 3 Lab Hours.**

A four-week course with students completing immunohematology procedures in an on-campus simulated laboratory setting. Students must adhere to HPS and MLT Clinical Practice Standards.

Prerequisites: MLT 251

**MLT 255 Clinical Microbiology with Applications****6 Credits. 3 Lecture Hours. 9 Lab Hours.**

A course on the theory and practice of clinical microbiology. Topics include: clinical significance and identification and antimicrobial susceptibility of pathogenic bacteria with introduction to other microorganisms. The course includes a two-week applications component performing clinical bacteriology procedures in an on-campus simulated laboratory setting. Students must successfully complete the theory course component in order to continue with the applications component.

Prerequisites: MLT 295

Corequisites: MLT 210: Clinical Immunology and Serology

**MLT 260 Clinical Microbiology****6 Credits. 3 Lecture Hours. 9 Lab Hours.**

A course on theory and application of procedures for clinical microbiology. Topics include: identification, antimicrobial susceptibility and clinical significance of bacteria; basic mycobacteriology; mycology; parasitology; and virology.

Prerequisites: MLT 250

**MLT 261 Clinical Microbiology****5 Credits. 2 Lecture Hours. 9 Lab Hours.**

A course on the theory and practice of clinical microbiology. Topics include: clinical significance, identification and antimicrobial susceptibility of pathogenic bacteria with introduction to other microorganisms.

Prerequisites: MLT 295

Corequisites: MLT 210: Clinical Immunology and Serology

**MLT 262 Clinical Microbiology Applications****1 Credit. 0 Lecture Hour. 1 Lab Hour.**

A two-week course with students completing clinical bacteriology procedures in an on-campus simulated laboratory setting. Students must adhere to HPS and MLT Clinical Practice Standards.

Prerequisites: MLT 261

**MLT 265 Immunohematology with Applications****5 Credits. 2 Lecture Hours. 9 Lab Hours.**

A course on the theory and practice of immunohematology, focusing on ABO/Rh typing procedures, antibody detection and identification techniques, and compatibility testing. Other topics include: hemolytic disease of the newborn, blood donor program regulations component therapy, transfusion reaction investigation, quality control, and problem solving. The course includes a two-week applications component performing immunohematology procedures in an on-campus simulated laboratory setting. Students must successfully complete the theory course component in order to continue with the applications component.

Prerequisites: MLT 210

Corequisites: MLT 270: Medical Laboratory Seminar

**MLT 270 Medical Laboratory Seminar****1 Credit. 0 Lecture Hour. 3 Lab Hours.**

Students review theories and procedures of medical laboratory technology to prepare for the certification exam. Topics include: laboratory operations, hematology, hemostasis, clinical chemistry, immunology, immunohematology, clinical microbiology, and test-taking strategies.

Prerequisites: MLT 210 and MLT 250 (minimum grade C for both)

**MLT 294 MLT Internship: Specimen Collection****1 Credit. 0 Lecture Hour. 4 Lab Hours.**

Students participate in specimen collection at an area laboratory or collection site, with emphasis on phlebotomy. Activities may include specimen processing. Students must adhere to HPS and MLT Clinical Practice Standards.

Prerequisites: MLT 181

**MLT 295 MLT Clinical Internship****1 Credit. 0 Lecture Hour. 20 Lab Hours.**

Students are assigned to a medical laboratory for full-time experience in hematology, hemostasis, clinical chemistry and urinalysis. Students must adhere to HPS and MLT Clinical Practice Standards.

Prerequisites: MLT 186 and MLT 187