

MEDICAL LABORATORY TECHNICIAN (513)

513-109 - Blood Bank

Focuses on blood banking concepts and procedures including blood typing, compatibility testing, work ups for adverse reaction to transfusions, disease states and donor activities. (Prerequisites: 513-110 Basic Lab Skills; 513-115 Basic Immunology Concepts. Corequisite: 513-120 Basic Hematology)

4 Credit hours
18 Lecture hours
108 Lab hours

513-110 - Basic Lab Skills

Explores laboratory science career options and the fundamental principles and procedures performed in the laboratory. Student will utilize medical terminology and basic laboratory equipment. Student will follow required safety and infection control procedures and perform simple laboratory tests. (Prerequisite: Acceptance into the Medical Laboratory Technician or Phlebotomist/Specimen Processor program)

1 Credit hours
36 Lab hours

513-111 - Phlebotomy

Provides opportunities for students to perform routine venipuncture, routine capillary puncture and special collection procedures. (Prerequisite: Acceptance into the Medical Laboratory Technician or Phlebotomist/Specimen Processor program. Completion of or concurrent enrollment in 513-110 Basic Lab Skills)

2 Credit hours
18 Lecture hours
36 Lab hours

513-113 - QA Lab Math

Focuses on performing the mathematical calculations routinely used in laboratory settings. Students will explore the concepts of quality control and quality assurance in the laboratory. (Prerequisites: Acceptance into the Medical Laboratory Technician program; Completion of or concurrent enrollment in 103-159 Computer Literacy – Microsoft Office; 513-110 Basic Lab Skills; 513-111 Phlebotomy; 806-177 General Anatomy and Physiology; 806-186 Introduction to Biochemistry; 890-101 College 101. Concurrent enrollment in 513-115 Basic Immunology Concepts)

1 Credit hours
36 Lab hours

513-114 - Urinalysis

Prepares students to perform a complete urinalysis which includes physical, chemical and microscopic analysis. Students will explore renal physiology and correlate urinalysis results with clinical conditions. (Prerequisites: 513-109 Blood Bank; 513-110 Basic Lab Skills; 513-111 Phlebotomy; 513-120 Basic Hematology; 806-177 General Anatomy and Physiology. Corequisite: 513-121 Coagulation)

2 Credit hours
18 Lecture hours
36 Lab hours

513-115 - Basic Immunology Concepts

Provides an overview of the immune system including laboratory testing methods for diagnosis of immune system disorders, viral and bacterial infections. (Prerequisites: Acceptance into the Medical Laboratory Technician program; Completion of or concurrent enrollment in 513-110 Basic Lab Skills; 513-111 Phlebotomy; 806-177 General Anatomy and Physiology. Concurrent enrollment in 513-113 QA Lab Math)

2 Credit hours
18 Lecture hours
36 Lab hours

513-116 - Clinical Chemistry

Introduces clinical chemistry techniques and procedures for routine analysis using photometric, potentiometric and separation techniques. Topics in this course include pathophysiology and methodologies for carbohydrate, lipids, proteins, renal function and blood gas analysis. Additional topics include hepatic, cardiac markers, tumor markers, endocrine function, miscellaneous body fluids, toxicology, enzymes and electrolytes. (Prerequisites: 513-114 Urinalysis; 806-186 Introduction to Biochemistry. Corequisites: 513-130 Advanced Hematology; 513-133 Clinical Microbiology)

4 Credit hours
36 Lecture hours
72 Lab hours

513-120 - Basic Hematology

Covers the theory and principles of blood cell production and function, and introduces students to basic practices and procedures in the hematology laboratory. (Prerequisites: 513-110 Basic Lab Skills; 513-111 Phlebotomy; 806-177 General Anatomy and Physiology. Corequisite: 513-109 Blood Bank)

3 Credit hours
18 Lecture hours
72 Lab hours

513-121 - Coagulation

Introduces the theory and principles of coagulation and explores mechanisms involved in coagulation disorders. Emphasis is placed upon laboratory techniques used to diagnose disease and monitor treatment. (Prerequisites: 513-109 Blood Bank; 513-110 Basic Lab Skills; 513-120 Basic Hematology; 806-177 General Anatomy and Physiology. Corequisite: 513-114 Urinalysis)

1 Credit hours
36 Lab hours

513-130 - Advanced Hematology

Explores mechanisms involved in the development of hematological disorders. Emphasis is placed upon laboratory techniques used to diagnose disorders and monitor treatment. (Prerequisite: 513-120 Basic Hematology. Corequisites: 513-116 Clinical Chemistry; 513-133 Clinical Microbiology)

2 Credit hours
18 Lecture hours
36 Lab hours

513-133 - Clinical Microbiology

Presents the clinical importance of infectious diseases with emphasis upon the appropriate collection, handling and identification of clinically relevant bacteria. Disease states, modes of transmission and methods of prevention and control, including antibiotic susceptibility testing, will also be discussed. (Prerequisites: 806-177 General Anatomy and Physiology; 806-197 Microbiology. Corequisites: 513-116 Clinical Chemistry; 513-130 Advanced Hematology)

4 Credit hours

18 Lecture hours

108 Lab hours

513-140 - Advanced Microbiology

Provides an overview of acid fast organisms, fungi, parasites, and anaerobic bacteria. The organisms, their pathophysiology, epidemiology, the diseases and conditions that they cause, laboratory methods of handling, culturing and identification will be discussed. (Prerequisites: 513-133 Clinical Microbiology; 806-197 Microbiology. Corequisites: 513-151 Clinical Experience 1; 513-152 Clinical Experience 2; 513-153 Clinical Experience Seminar; 513-170 Introduction to Molecular Diagnostics)

2 Credit hours

36 Lecture hours

513-151 - Clinical Experience 1

Students will practice the principles and procedures of laboratory medicine as an entry-level Medical Laboratory Technician (MLT) in a clinical laboratory setting. Working alongside laboratory professionals, you will collect and process specimens, operate laboratory analyzers and instruments and report results in a Laboratory Information Systems. (Prerequisites: 513-133 Clinical Microbiology; Criminal Background Check and Health Requirement Verification required. Corequisites: 513-140 Advanced Microbiology; 513-152 Clinical Experience 2; 513-153 Clinical Experience Seminar; 513-170 Introduction to Molecular Diagnostics. Must have earned a "C" or better in all of the MLT courses)

3 Credit hours

216 Other hours

513-152 - Clinical Experience 2

Provides continuing practice for the principles and procedures of laboratory medicine as an entry-level Clinical Laboratory Technician in a clinical laboratory setting. Students will learn to operate state-of-the-art instruments and report results on Laboratory Information Systems. (Prerequisites: 513-133 Clinical Microbiology; Criminal Background Check and Health Requirement Verification required. Corequisites: 513-140 Advanced Microbiology; 513-151 Clinical Experience 1; 513-153 Clinical Experience Seminar; 513-170 Introduction to Molecular Diagnostics. Must have earned a "C" or better in all of the MLT courses)

4 Credit hours

36 Lab hours

216 Other hours

513-153 - Clinical Experience Seminar

Promotes student success by completing the MLT Exit Exam and preparing for the ASCP Board of Certification Exam. Each topic area of the clinical laboratory will be reviewed in an interactive manner during the semester. (Prerequisite: 513-133 Clinical Microbiology. Corequisites: 513-140 Advanced Microbiology; 513-151 Clinical Experience 1; 513-152 Clinical Experience 2; 513-170 Introduction to Molecular Diagnostics)

3 Credit hours

54 Lecture hours

513-170 - Introduction to Molecular Diagnostics

Introduces the principles and application of Molecular Diagnostics in the Clinical Laboratory. (Prerequisites: 513-110 Basic Lab Skills; 513-133 Clinical Microbiology. Corequisites: 513-140 Advanced Microbiology; 513-151 Clinical Experience 1; 513-152 Clinical Experience 2; 513-153 Clinical Experience Seminar)

2 Credit hours

36 Lecture hours