

MEDICAL LABORATORY TECHNICIAN (513)

513-100 - Phlebotomy Essentials

Prepares students to collect blood specimens for laboratory analysis. Students apply medical terminology, basic anatomy and physiology, infection control, safety, communication and professionalism as they relate to the role of the phlebotomist in the medical laboratory. Specimen collection equipment and venipuncture used. This course is for Phlebotomy Technician Certificate students only. Students must be 18 years of age or older and complete the series of three hepatitis B immunizations in order to begin the Phlebotomy courses.

4 Credit hours

54 Lecture hours

36 Lab hours

513-101 - Phlebotomy Clinical

Provides students with experiences at a hospital, clinic and/or blood center locations in order to complete phlebotomy activities. Students complete venipunctures, perform administration of glucose testing, collect specimens, perform bleeding times, observe or perform arterial blood gas collections and adhere to safety regulations as established by the clinical site. (Prerequisites: 513-100 Phlebotomy Essentials or 513-111 Phlebotomy; criminal background check)

2 Credit hours

144 Other hours

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. Corequisites: 513-114 Urinalysis; 513-120 Basic Hematology; 513-121 Coagulation)

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. (Prerequisites: Concurrent enrollment in 513-111 Phlebotomy; 513-113 QA Lab Math; 513-115 Basic Immunology Concepts or concurrent enrollment in 513-100 Phlebotomy Essentials)

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: Must be a health program coded student)

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: 806-177 General Anatomy and Physiology. Completion of or concurrent enrollment in 103-159 Computer Literacy – Microsoft Office; 806-186 Introduction to Biochemistry; 890-101 College 101. Concurrent enrollment in 513-110 Basic Lab Skills; 513-111 Phlebotomy; 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. (Prerequisite: 513-111 Phlebotomy. Corequisites: 513-109 Blood Bank; 513-120 Basic Hematology; 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: Concurrent enrollment in 513-110 Basic Lab Skills; 513-111 Phlebotomy; 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. (Prerequisite: 513-111 Phlebotomy. Corequisites: 513-109 Blood Bank; 513-114 Urinalysis; 513-121 Coagulation)

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. (Prerequisite: 513-110 Basic Lab Skills. Corequisites: 513-109 Blood Bank; 513-114 Urinalysis; 513-120 Basic Hematology)

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. (Prerequisite: 513-133 Clinical 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; health requirements; criminal background check required. Corequisites: 513-140 Advanced Microbiology; 513-152 Clinical Experience 2; 513-153 Clinical Experience Seminar; 513-170 Introduction to Molecular Diagnostics)

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; health requirements; criminal background check required. Corequisites: 513-140 Advanced Microbiology; 513-151 Clinical Experience 1; 513-153 Clinical Experience Seminar; 513-170 Introduction to Molecular Diagnostics)

4 Credit hours

288 Other hours

513-153 - Clinical Experience Seminar

Promotes student success for completing the CLT Exit Exam and the Board of Registry 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. (Prerequisite: 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