

MEDICAL LABORATORY SCIENCE (MLS)

MLS 101. Introduction to Medical Laboratory Science

Credits: 1

Typically Offered: FALLSPR

An introduction to the medical laboratory and the profession of clinical laboratory science. Professional ethics, medical terminology, laboratory safety, the use and care of basic laboratory equipment. Open to all students.

MLS 102. Human Structure and Function

Credits: 2

Corequisite: MLS 102L.

Typically Offered: FALL

Designed for students enrolled in the Medical Laboratory Technician program. This class does not fulfill the requirements for nursing, surgical technician, and paramedic. Not GERTA approved. Fundamental concepts of the structure and function of the cells, tissues, organs and organ systems of the human body. Special emphasis is placed on those systems most closely related to diagnostic procedures performed in the clinical laboratory, including the following: skeletal, muscular, nervous, cardiovascular, lymphatic, immune, endocrine, digestive, respiratory and renal. Open to all pre MLT and MLT students.

MLS 102L. Human Structure and Function Laboratory

Credits: 1

Corequisite: MLS 102.

Typically Offered: FALL

This is the laboratory section of MLS 102, concurrent registration is required. Designed for students enrolled in the Medical Laboratory Technician program. Does not fulfill the requirements for nursing, surgical technician and paramedic. Not GERTA approved. Special emphasis is placed on those systems most closely related to diagnostic procedures performed in the clinical laboratory, including the following: skeletal, muscular, nervous, cardiovascular, lymphatic, immune, endocrine, digestive, respiratory and renal.

MLS 105. Phlebotomy and Laboratory Procedures

Credits: 1

Corequisite: MLS 105L.

Typically Offered: SPRING

Phlebotomy is the "art of drawing blood". The course consists of a knowledge component to include: anatomy of hand, arm, foot and blood vessels; blood composition, specimen types, and coagulation factors. The attitude component discusses the public relations aspect of the job and job application.

MLS 105L. Phlebotomy and Laboratory Procedures Laboratory

Credits: 1

Corequisite: MLS 105.

Typically Offered: SPRING

Phlebotomy is the "art of drawing blood". The motor skills component will include instruction in manual phlebotomy techniques and drawing and handling specimens. The attitude component discusses the public relations aspect of the job and job application. Each student is expected to be a "patient" on a weekly basis, as well as a phlebotomist.

MLS 114. Urinalysis and Body Fluids

Credits: 1

Prerequisite: Acceptance into MLT program.

Corequisite: MLS 114L

Typically Offered: FALL

Review of renal anatomy and physiology; urinalysis theory and techniques, with emphasis on microscopic analysis of urine sediment.

MLS 114L. Urinalysis and Body Fluids Laboratory

Credits: 1

Prerequisite: Acceptance into the MLT program.

Corequisite: MLS 114.

Typically Offered: FALL

This is the laboratory course for MLS 114, students will perform evaluations on a variety of fluids including urine and other body fluids.

MLS 116. Clinical Parasitology and Mycology

Credits: 1

Prerequisite: Acceptance into the MLT program.

Corequisite: MLS 116L.

Typically Offered: FALL

Study of fungi and parasites and their relationship to the human host. Concurrent registration with MLS 116L is required.

MLS 116L. Clinical Parasitology and Mycology Laboratory

Credits: 1

Prerequisite: Acceptance into the MLT program.

Corequisite: MLS 116.

Typically Offered: FALL

This is the laboratory companion to MLS 116. Study of fungi, parasites and their relationship to the human host, through microscopic identification of the fungi, ova and parasites by clinical laboratory techniques. Concurrent registration with MLS 116 required.

MLS 202. Immunology and Molecular Diagnostics

Credits: 3

Prerequisites: BIOL 220 and BIOL 220L or MLS 102 and MLS 102L.

Corequisites: MLS 202L.

Typically Offered: FALL

This course will serve as an introductory immunology course that will stress the fundamental concepts of immunology and serology. Topics include historical figures, innate and adaptive immunity, antibodies, antigens, adaptive immune response, complement, allergy and serological procedures. The goal of the course is to provide the student with an understanding of the basic principles of immunology and serology. Course must be taken concurrently with MLS 202L.

MLS 202L. Immunology and Molecular Diagnostics Laboratory

Credits: 1

Prerequisites: BIOL 220 and BIOL 220L or MLS 102 and MLS 102L.

Corequisite: MLS 202.

Typically Offered: FALL

This course serves as a supplemental laboratory for MLS 202, the courses must be taken concurrently. Laboratory procedures will include immunology and molecular testing methods.

MLS 205. Clinical Internship I

Credits: 1

Prerequisites: MLS 101, MLS 105, MLS 105L, MLS 114, MLS 114L, MLS 116, MLS 116L, MLS 202, MLS 202L and MLS 220, MLS 220L.

Typically Offered: SUMMER

Supervised rotations in the phlebotomy and clinical microscopy departments of the clinical affiliate laboratory.

MLS 215. Clinical Internship II

Credits: 2

Prerequisite: MLS 205.

Typically Offered: SUMMER

Supervised experience in the hematology, chemistry, microbiology and blood banking departments of the affiliated clinical laboratory.

MLS 216. Clinical Experience I

Credits: 3

Prerequisites: MLS 101, MLS 105, MLS 105L, MLS 114, MLS 114L, MLS 116, MLS 116L, MLS 202, MLS 202L, MLS 221, MLS 222, MLS 222L, MLS 230, MLS 230L, MLS 242, MLS 242L, MLS 250, MLS 250L.

Typically Offered: SUMMER

Designed for students enrolled in the Medical Laboratory Technician program. Supervised experience in the hematology, chemistry, microbiology and blood banking departments of the affiliated clinical laboratory.

MLS 220. Hematology and Hemostasis

Credits: 3

Prerequisite: Acceptance to the MLT program.

Corequisite: MLS 220L

Typically Offered: SPRING

The study of hematopoiesis and blood function. The student will learn to recognize normal and abnormal blood cells and acquire knowledge of hematology disorders and the tests used to diagnose them. The theory of hemostasis and blood coagulation will be covered. Must be taken concurrently with MLS 220L.

MLS 220L. Hematology and Hemostasis Laboratory

Credits: 1

Prerequisite: Acceptance to the MLT program.

Corequisite: MLS 220.

Typically Offered: SPRING

This is the laboratory companion to MLS 220, the two courses are taken concurrently. The student will put to use the knowledge obtained in MLS 220. The student will learn to recognize normal and abnormal blood cells and acquire knowledge of hematology disorders and tests used to diagnose them. Performance of hemostasis and blood coagulation routine procedures. Proper blood collection techniques and manual routine hematology and hemostasis procedures will be covered.

MLS 221. Hemostasis

Credits: 1

Prerequisite: Acceptance in the Medical Laboratory Technician Program.

Typically Offered: SUMMER

Designed for students enrolled in the Medical Laboratory Technician program. This online course will cover the theory of hemostasis and the process of blood coagulation. The steps of clot formation and destruction will be thoroughly explored. Inherited and acquired diseases of coagulation will be reviewed to gain robust understanding of coagulopathies tested in a routine hospital laboratory.

MLS 222. Hematology

Credits: 3

Prerequisite: Acceptance in the Medical Laboratory Technician Program.

Corequisite: MLS 222L.

Typically Offered: SPRING

Designed for students enrolled in the Medical Laboratory Technician program. The study of hematopoiesis and blood function. The student will learn to recognize normal and abnormal blood cells and acquire knowledge of hematology disorders and the tests used to diagnose them. Proper blood collection techniques and manual hematology procedures will be covered.

MLS 222L. Hematology Laboratory

Credits: 1

Prerequisite: Acceptance in the Medical Laboratory Technician Program.

Corequisite: MLS 222.

Typically Offered: SPRING

Designed for students enrolled in the Medical Laboratory Technician program. The study of hematopoiesis and blood function. The student will learn to recognize normal and abnormal blood cells and acquire knowledge of hematology disorders and the tests used to diagnose them. Proper blood collection techniques and manual hematology procedures will be covered.

MLS 230. Clinical Chemistry

Credits: 3

Prerequisites: MLS 101, CHEM 115, CHEM 115L, or CHEM 121, CHEM 121L; MLS 102, MLS 102L or all of the following four courses BIOL 220, BIOL 220L, BIOL 221, and BIOL 221L.

Corequisite: MLS 230L.

Typically Offered: FALL

Principles of instrumentation and the theory and application of the biochemical tests performed in the clinical laboratory. Must be taken concurrently with MLS 230L.

MLS 230L. Clinical Chemistry Laboratory

Credits: 1

Prerequisites: MLS 101, CHEM 115, CHEM 115L, or CHEM 121, CHEM 121L; MLS 102, MLS 102L or all of the following four courses BIOL 220, BIOL 220L, BIOL 221, and BIOL 221L.

Corequisite: MLS 230.

Typically Offered: FALL

The student will receive instruction in the basic techniques required for performing routine manual determinations in a clinical laboratory. Must be taken concurrently with MLS 230.

MLS 242. Immunohematology

Credits: 3

Prerequisites: Acceptance to the MLT program, MLS 101, MLS 202 and MLS 202L.

Corequisites: MLS 220, MLS 220L and MLS 242L.

Typically Offered: SPRING

Fundamental principles of immunology are presented and applied to serology and blood banking. Donor selection, blood collection and processing, blood components, and compatibility testing. Preparation and administration of blood and genetics of blood group inheritance. Must be taken concurrently with MLS 242L.

MLS 242L. Immunohematology Laboratory

Credits: 1

Prerequisites: Acceptance to the MLT program, MLS 101, MLS 202 and MLS 202L.

Corequisites: MLS 220, MLS 220L and MLS 242.

Typically Offered: SPRING

Students will perform the following procedures: Donor selection, blood collection and processing, blood components and compatibility testing. Also covered will be preparation and administration of blood and genetics of blood group inheritance. Must be taken concurrently with MLS 242.

MLS 250. Clinical Microbiology

Credits: 2

Prerequisites: Acceptance to the MLT program, MICR 202, MICR 202L, MLS 101, MLS 202, MLS 202L, MLS 116, and MLS 116L.

Corequisite: MLS 250L.

Typically Offered: SPRING

The morphology, cultural characteristics and identification of bacteria pathogenic to man and their role in infectious disease are discussed, as well as antibiotic susceptibility testing and rapid identification systems. Must be taken concurrently with MLS 250L.

MLS 250L. Clinical Microbiology Laboratory

Credits: 2

Prerequisites: Acceptance to the MLT program, MICR 202, MICR 202L, MLS 101, MLS 202, MLS 202L, MLS 116, and MLS 116L.

Corequisite: MLS 250.

Typically Offered: SPRING

This course is a supplemental laboratory to MLS 250, student will demonstrate skill in morphology, cultural characteristics and identification of bacteria pathogenic to man and their role in infectious disease are discussed, as well as antibiotic susceptibility testing and rapid identification systems. Must be taken concurrently with MLS 250.

MLS 255. Clinical Internship III

Credits: 12

Prerequisites: All MLS courses.

Typically Offered: ONDEMAND

Supervised experience in the hematology, chemistry, microbiology, and blood banking departments of the affiliated clinical laboratory.

MLS 256. Clinical Experience II

Credits: 5

Prerequisite: MLS 216.

Corequisite: MLS 257.

Typically Offered: FALL

Designed for students enrolled in the Medical Laboratory Technician program. Supervised experience in the hematology, chemistry, microbiology and blood banking departments of the affiliated clinical laboratory.

MLS 257. MLT Seminar

Credits: 1

Prerequisite: MLS 216.

Corequisite: MLS 256.

Typically Offered: FALL

Designed for Medical Laboratory Technician students during their Clinical Experience. This course will provide students with concepts and techniques necessary to pass the American Society for Clinical Pathology (ASCP) Medical Laboratory Technician (MLT) national board of certification (BOC) examination. Additionally, the course covers professional resume writing, job application submission, and interview techniques. Finally, the course will provide students with the necessary information to register for the national certification exam and state licensure.