

Medical Lab Science (MLS)

Courses

MLS 5510 Phlebotomy Practicum: 1 semester hour.

Introduction to the theory and procedures for the practice of phlebotomy and simple laboratory testing. Part of the Medical Laboratory Science Core Curriculum, also suited for other health care providers. Specific, evaluated graduate level activities and/or performances are identified in the course syllabus. PREREQ: Acceptance into the Medical Laboratory Science Program. F

MLS 5512 Urinalysis and Body Fluids: 1 semester hour.

Fundamental principles of urine and body fluid analysis with correlation of laboratory methods and practice. Graduate students will prepare, conduct, and evaluate case study sessions. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5514 Hematology and Hemostasis: 3 semester hours.

Theoretical and applied aspects of medical hematology and hemostasis with emphasis on recognition and correlation of abnormal laboratory observations with pathological conditions. Graduate students will prepare, conduct, and evaluate case study sessions. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5516 Medical Microbiology I: 3 semester hours.

Study and identification of medically important bacteria, viruses, fungi, chlamydiae, rickettsiae, and parasites as applicable to laboratory and infection control settings. Graduate students will prepare, conduct, and evaluate case study sessions. PREREQ: BIOL 2235 or BIOL 2221 or equivalent and acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5518 Medical Chemistry and Instrumentation: 3 semester hours.

Theoretical and applied aspects of medical chemistry with emphasis on test development, validation, and use in diagnosis and management of pathological conditions. Graduate students will prepare, conduct, and evaluate case study sessions. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5520 Medical Immunology: 2 semester hours.

Practical aspects of immunology with emphasis on pathological conditions and laboratory practice. Graduate students will prepare, conduct, and evaluate case study sessions. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5522 Basic Concepts in Transfusion Medicine: 2 semester hours.

Practical aspects and theoretical considerations of major blood groups with respect to transfusion therapy. Oral and written project presentation required for graduate credit. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5524 Medical Laboratory Fundamentals: 1 semester hour.

Theory and application of basic techniques and instruments used in all areas of medical laboratories. Graduate students will evaluate laboratory methods and write standard operating procedures. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee. Lab fee.

MLS 5531 Medical Microbiology II: 3 semester hours.

Advanced topics in medical microbiology, including application of laboratory techniques to the identification and evaluation of medically important pathogens, and correlations with disease states. Graduate students will prepare, conduct, and evaluate case study sessions. PREREQ: MLS 5516 and acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5533 MLS Management and Education: 2 semester hours.

Advanced principles of current personnel, financial, regulatory issues, laboratory information systems, management, and education. Student presentations will be required. Students taking the course for graduate credit will prepare, conduct, and evaluate a project. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5535 Molecular Diagnostics: 3 semester hours.

A comprehensive overview of the fundamental principles of medical molecular diagnostics and use of molecular techniques in the diagnosis of disease. Topics include: Nucleic acid structure and function, genetics, DNA chemistry, introduction to nucleic acid isolation, identification and amplification techniques. Graduate students will prepare, conduct, and evaluate case study sessions. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5537 Critical Analysis of Lab Information: 3 semester hours.

Evaluation of clinical laboratory values with emphasis on advanced methods, specialized statistics, algorithm building, and clinical correlations. Graduate students will prepare, conduct, and evaluate case study sessions. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5539 Advanced Concepts in Transfusion Medicine: 2 semester hours.

Advanced topics in Immunohematology. Application of laboratory techniques to the identification and evaluation of antibodies and antigens. Emphasis on transfusion therapy. Graduate students will prepare, conduct, and evaluate case study sessions. PREREQ: MLS 5522 and acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5541 MLS Graduate Research: 1-3 semester hours.

Individual theory and application of related topics associated with the medical laboratory. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee.

MLS 5555 MLS Student Laboratory Practices: 2 semester hours.

Directed practice in the advanced tests and techniques in common use in the medical laboratory (including molecular biology, microbiology, hematology, chemistry, blood bank). Graduate students will be responsible for higher complexity testing and advanced problem solving exercises. PREREQ: Acceptance into the Medical Laboratory Science program. Professional fee. Lab fee.

MLS 5591 Microbiology Practicum: 2 semester hours.

Structured medical laboratory experiences in microbiology as determined by Medical Laboratory Science faculty.

MLS 5592 Hematology and Urinalysis Practicum: 2 semester hours.

Structured medical laboratory experiences in hematology and urinalysis as determined by Medical Laboratory Science faculty.

MLS 5593 Transfusion (Blood Bank) Practicum: 1 semester hour.

Structured medical laboratory experiences in blood bank transfusions as determined by Medical Laboratory Science faculty.

MLS 5594 Chemistry Practicum: 1 semester hour.

Structured medical laboratory experiences in chemistry and automation as determined by Medical Laboratory Science faculty.

MLS 6640 Advanced Topics in Hematology: 1-4 semester hours.

Current research and practice in hematology and hemostasis including molecular approaches to medical diagnosis and treatment. May be repeated for a maximum of 4 credits.

MLS 6641 Advanced Topics in Immunology and Transfusion Medicine: 1-4 semester hours.

Current research and practice in immunology and transfusion medicine including molecular approach to diagnosis and treatment. May be repeated for a maximum of 4 credits.

MLS 6642 Advanced Topics in Medical Chemistry: 1-4 semester hours.

Current research and practice in medical chemistry including innovative instrumentation and molecular diagnostics. May be repeated for a maximum of 4 credits.

MLS 6643 Advanced Topics in Medical Laboratory Education: 1-4 semester hours.

Curriculum design and evaluation in the Medical Laboratory setting. May be repeated for a maximum of 4 credits.

MLS 6644 Advanced Topics in Medical Microbiology: 1-4 semester hours.

Current research in microbiology and molecular diagnostics including the molecular basis of important infectious diseases, microbial pathogenesis, and host-pathogen interactions. May be repeated for a maximum of 4 credits.

MLS 6647 MLS Capstone: 1-6 semester hours.

Completion of a Medical Laboratory Science project. Practical application of a knowledge/skill in laboratory practice, management, or education. May be repeated for a total of 6 credits. Graded S/U. Prerequisite: Acceptance into the Medical Laboratory Science program. Professional fee.

MLS 6648 MLS Graduate Problems: 1-9 semester hours.

Thesis-related research. May be repeated. Graded S/U. PREREQ: Graduate standing and permission of instructor.

MLS 6650 Thesis: 1-9 semester hours.

Thesis-related research. May be repeated. Graded S/U. PREREQ: Graduate standing and permission of instructor.

MLS 6651 Graduate Seminar: 2 semester hours.

An online elective graduate course for students admitted into the Medical Laboratory Science program.

MLS 6699 Experimental Course: 1-6 semester hours.

The content of this course is not described in the catalog. Title and number of credits are announced in the Class Schedule. Experimental courses may be offered no more than three times with the same title and content. May be repeated.