

## MEDICAL LABORATORY SCIENCE (MLS)

### Courses

#### **MLS 5100. Gr Clinical Chemistry I. 4 Credits.**

This is part one of a two semester series in Clinical Chemistry. Prepares students to work in the clinical chemistry laboratory to analyze patient samples, assess whether or not lab data is accurate, think critically, and problem solve. Credit not awarded for both MLS 5100 and MLS 3100. Prerequisite: Medical Laboratory Science Graduate student or Instructor permission.

#### **MLS 5110. Gr Clinical Chemistry II. 3 Credits.**

Clinical Chemistry is the discipline of pathology that is concerned with the detection and measurement of biochemical changes in disease, and helps to investigate for the presence of disease with panels of biochemical tests for renal disease, electrolyte disturbances, drug levels and toxic agents, blood gas and acid-base status, bone disease, diabetes, etc. Prerequisites: MLS 5100; Medical Laboratory Science Graduate student; or Instructor permission.

#### **MLS 5200. Gr Hematology. 3 or 4 Credits.**

Lecture and laboratory that integrates theory with application of hematology and hemostasis diagnostic procedures, interpretation, problem solving and correlation of laboratory findings with disease states. Covers the fundamentals of blood cell development, structure, function, biochemistry, cell and molecular biology. Credit not awarded for both MLS 5200 and MLS 3200. Prerequisite: Medical Laboratory Science Graduate student.

#### **MLS 5300. Gr Clinical Micro II. 3 Credits.**

Comprehensive study of non-bacterial pathogenic microorganisms and their disease states in humans. Includes medical mycology, parasitology and virology. Focus on understanding the biology of these organisms and learning about evaluation, diagnosis, and treatment of diseases caused by these pathogens. Credit not awarded for both MLS 5300 and MLS 3300. Prerequisite: Medical Laboratory Science Graduate student.

#### **MLS 5400. Gr Immunohematology. 4 Credits.**

Combines lecture and laboratory experiences to provide knowledge in regulations, quality and compliance in Immunohematology and transfusion medicine. Provides an overview of donor blood collection, processing, testing and storage as well as the understanding of cellular therapy in the hospital transfusion service. Credit not awarded for both MLS 5400 and MLS 3400. Prerequisites: BHSC 3420 or MMG 3230; or Medical Laboratory Science Graduate student.

#### **MLS 5990. Special Topics. 1-18 Credits.**

See Schedule of Courses for specific titles.

#### **MLS 5993. Independent Study. 1-18 Credits.**

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

#### **MLS 6000. Certification Review. 1 Credit.**

Certification review of the Medical Laboratory Science Body of Knowledge. It is designed to provide a challenging self directed assessment of practical and theoretical knowledge and will prepare students to successfully pass the ASCP certification exam in Medical Laboratory Science. Prerequisites: MLS 3300, MMG 3230, MLS 3100, MMG 3220, MLS 3110, MLS 3200, MLS 3400. Pre/Co-requisite: MLS 6700.

#### **MLS 6100. Advanced Immunobiology. 3 Credits.**

Advanced survey of key current topics in immunology. Focus on understanding the key concepts and experimental approaches in the major areas in immunology, with an emphasis on applications to human disease. Prerequisites: Cell Biology and Biochemistry recommended.

#### **MLS 6300. Emerging Diag. Technologies. 3 Credits.**

Provides advanced, graduate-level education in medical laboratory testing. Using the scientific literature, students will review and discuss historical and emerging medical laboratory strategies that relate to human health and disease and the clinical environment.

#### **MLS 6500. Research and Design II. 3 Credits.**

Provides students with a foundation in how to read the primary literature, understanding the major sections of a primary literature reports, and instruction on writing their own reports to facilitate their success for their capstone project. Prerequisite: MLS 6400.

#### **MLS 6600. Research Capstone. 1-3 Credits.**

The third course in a three-course research series. Complete the capstone project under the guidance of the research mentor or the Graduate Program Director/Course Instructor. Communicate the findings both through a formal oral presentation and a written research paper. Prerequisites: NH 6899, MLS 6400, MLS 6500.

#### **MLS 6700. Clinical Practicum. 12 Credits.**

Clinical Practicum involves a semester long directed clinical practice in Hematology, Chemistry, Microbiology, Immunohematology, and Molecular Biology at assigned clinical affiliate sites. Prerequisites: MLS 3300, MMG 3230, MLS 3100, MMG 3220, MLS 3110, MLS 3200, MLS 3400.

#### **MLS 6900. Clinical Leadership & Mgt. 3 Credits.**

Focuses on the fundamentals of clinical leadership and management, with particular emphasis on organizational design, problem solving, communication and change theories. Strategies for human resource management, project management, quality improvement, increasing productivity, and ensuring financial viability are covered.

#### **MLS 6990. Special Topics. 1-18 Credits.**

See Schedule of Courses for specific titles.

#### **MLS 6993. Independent Study. 1-18 Credits.**

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.