

## MEDICAL LABORATORY SCIENCE (MLS)

### Courses

#### **MLS 221. Clinical Chemistry I. 3 or 4 Credits.**

Lectures and laboratory experiences introduce basic principles in clinical quantitative analysis and laboratory instrumentation; test results are correlated with clinical case studies. Prerequisites: ANPS 019 and ANPS 020; CHEM 031 and 032; CHEM 042 or CHEM 141.

#### **MLS 222. Clinical Chemistry II. 3 Credits.**

Advanced instruction in body chemistry and pathophysiology of disease with emphasis on diagnostic lab techniques in chemistry. Prerequisites: MLS 221, PATH 101.

#### **MLS 231. Hematology. 3-4 Credits.**

Advanced theory and analysis of blood cell physiology and related pathology. Concepts of hemostasis and clinical assessment methods. Prerequisites: One semester of organic chemistry, one semester of biochemistry.

#### **MLS 255. Clinical Microbiology II. 3 Credits.**

Comprehensive study of non-bacterial pathogenic microorganisms and their disease states in humans. Includes medical mycology, parasitology and virology. Prerequisites: MMG 065 or MMG 101.

#### **MLS 262. Immunohematology. 4 Credits.**

Advanced theory and experience related to human blood groups and transfusion practice. Prerequisite: MLRS 242 or MMG 223.

#### **MLS 301. 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: MLRS 281, MLRS 282, MLS 255; MLRS 242 or MMG 223; MLRS 244, MLS 221, MMG 222, MLS 222, MLS 231, MLS 262.

#### **MLS 302. 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 MLS. Prerequisites: MLRS 281, MLRS 282, MLS 255; MLRS 242 or MMG 223; MLRS 244, MLS 221, MMG 222, MLS 222, MLS 231, MLS 262. Pre/Co-requisite: MLS 301.

#### **MLS 310. 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: Graduate student standing; Cell Biology and Biochemistry recommended.

#### **MLS 371. Clinical Correlations. 3 Credits.**

Advanced, graduate-level education in medical laboratory testing. The appropriate utilization of laboratory tests for screening, diagnosis, monitoring and determining prognosis of various human diseases will be discussed.

#### **MLS 372. 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 389. Research and Design I. 3 Credits.**

Guides students to identify a research capstone project and will include instruction in literature evaluation, review of experimental design and evaluation, and a foundational understanding of evidence based practice.

#### **MLS 390. 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 389.

#### **MLS 391. Research Capstone. 3 Credits.**

Students will complete a capstone project under the guidance of his/her research mentor. Findings will be communicated both through a formal oral presentation and a written research paper that will be submitted for publication. Prerequisites: MLS 389, MLS 390.

#### **MLS 392. 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 396. Advanced Special Topics. 1-18 Credits.**

See Schedule of Courses for specific titles.

#### **MLS 397. 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.