

# MEDICAL LABORATORY SCIENCES (MLSC)

---

## **MLSC 3301. Fundamentals of Medical Laboratory Sciences. (3 Credits)**

Introduction to the various disciplines of study in laboratory medicine. Principles of laboratory safety, quality assurance and quality control and laboratory mathematics, as well as use of common laboratory equipment. **Enrollment Requirements:** Open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

## **MLSC 3333. Mycology, Parasitology and Virology. (3 Credits)**

Principles of disease and epidemiology, mechanisms of pathogenicity and laboratory isolation and identification of fungi, parasites and viruses causing human disease. **Enrollment Requirements:** MCB 2610; open only to Medical Laboratory Sciences majors, others with consent of Program Director.

## **MLSC 3365. Theory of Phlebotomy. (1 Credit)**

Venipuncture and special phlebotomy techniques, safety, ethics, and management of phlebotomy services. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). **Enrollment Requirements:** A grade of C or better in AH 2001; open only to Medical Laboratory Sciences majors, others with consent of Program Director.

## **MLSC 4094W. Seminar in Medical Laboratory Sciences. (2 Credits)**

Examination of case studies integrating all areas of the clinical laboratory in the prevention, diagnosis, and treatment of disease. Design and implementation of a research project or investigation of a topic in Medical Laboratory Sciences. Oral and written presentation of research project or topic.

**Enrollment Requirements:** A grade of C or better in AH 4241; ENGL 1007 or 1010 or 1011; open only to Medical Laboratory Sciences majors, others with consent of Program Director.

**Skill Codes:** COMP. Writing Competency

## **MLSC 4095. Special Topics. (1-6 Credits)**

Application of the scientific method of inquiry to plan, implement, evaluate and report a study of a problem in medical technology or investigation of a special topic not covered in undergraduate medical technology courses.

**Enrollment Requirements:** Completion of first-year - sophomore requirements in the Medical Laboratory Sciences Program. May be repeated for credit

## **MLSC 4099. Independent Study for Undergraduates. (1-6 Credits)**

Designed primarily for students who wish to extend their knowledge in some specialized areas in the field of Medical Laboratory Sciences. May be repeated for credit

## **MLSC 4301. Clinical Chemistry and Instrumentation. (1-3 Credits)**

Manual and automated methods for the biochemical analysis of blood and body fluids; principles of operation, maintenance, and troubleshooting of laboratory instruments. Evaluation of test results in normal and diseased states.

**Enrollment Requirements:** MCB 2000; open only to Medical Laboratory Sciences majors, others with consent of Program Director. May be repeated for a total of 3 credits

## **MLSC 4302. Clinical Chemistry Laboratory. (3 Credits)**

Application of the theory and techniques learned in MLSC 4301 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results; instrumentation and quality assurance or the general laboratory environment.

**Enrollment Requirements:** A grade of "C" or better in MLSC 4301. Open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

## **MLSC 4311. Hematology. (4 Credits)**

Principles of body fluids, blood cell formation, morphology, function and kinetics; pathophysiology of body fluid and blood cell disorders; principles and procedures used to evaluate blood cells in blood and body fluids; and, laboratory practice in microscopic examination.

**Enrollment Requirements:** Open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

## **MLSC 4312. Hematology Laboratory. (3 Credits)**

Application of the theory and techniques learned in MLSC 4311 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation and quality assurance in the general laboratory environment. Correlation of blood cell morphology and laboratory data in normal and disease states.

**Enrollment Requirements:** A grade of C or better in MLSC 4311; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

## **MLSC 4321. Clinical Immunology. (2 Credits)**

Methods for detection of antigens and antibodies in blood and body fluids; immunological methods for the diagnosis of infectious diseases and abnormalities of the immune system.

**Enrollment Requirements:** A grade of C or better in AH 3121. Open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

## **MLSC 4322. Clinical Immunology Laboratory. (1 Credit)**

Application of the theory and techniques learned in MT 4321 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation, and quality assurance in the general laboratory environment.

**Enrollment Requirements:** A grade of C or better in MLSC 4321; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

## **MLSC 4341. Clinical Microbiology. (4 Credits)**

Isolation and identification of normal flora and clinically significant bacteria and fungi from clinical specimens, correlation of the organisms isolated to disease states, and susceptibility testing of bacteria.

**Enrollment Requirements:** MCB 2610; open only to Medical Laboratory Sciences majors, others with consent of Program Director.

## **MLSC 4342. Clinical Microbiology Laboratory. (4 Credits)**

Application of the theory and techniques learned in MLSC 3333 and MLSC 4341 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation, and quality assurance in the general laboratory environment.

**Enrollment Requirements:** A grade of C or better in MLSC 4341; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

**MLSC 4351. Transfusion Services. (3 Credits)**

Human blood groups, HLA antigens, compatibility testing, donor selection, and their relationship to transfusion and transplantation. Evaluation of laboratory results for selection of blood components for therapy.

**Enrollment Requirements:** A grade of C or better in AH 3121; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

**MLSC 4352. Transfusion Services Laboratory. (3 Credits)**

Application of the theory and techniques learned in MLSC 4351 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation and quality assurance and preparation of blood components in the general laboratory environment.

**Enrollment Requirements:** A grade of C or better in MLSC 4351; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

**MLSC 4371. Urinalysis and Hemostasis. (2 Credits)**

Introduction to the analysis of urine including physical, chemical and microscopic examination as well as other miscellaneous laboratory procedures. Principles of hemostasis, pathophysiology of coagulation disorders; and, laboratory procedures to evaluate coagulation.

**Enrollment Requirements:** Open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

**MLSC 4372. Urinalysis Laboratory. (1 Credit)**

Application of the theory and techniques learned in MLSC 4371 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation and quality assurance in the general laboratory setting environment.

**Enrollment Requirements:** A grade of C or better in MLSC 4371; open only to Medical Laboratory Sciences majors and Medical Laboratory Sciences certificate students; others with consent of Medical Laboratory Sciences Program Director.

**MLSC 4500. Laboratory Operations and Professional Practice. (2 Credits)**

Professionalism and basic management practice in the clinical laboratory. Human resource management, continuous quality improvement/performance improvement, financial management. Educational methodology and terminology and communication skills.

**Enrollment Requirements:** Open to Medical Laboratory Sciences and Diagnostic Genetic Sciences programs, others with consent of instructor.