

# Medical Lab Science (MLS)

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## Courses

### **MLS 4410 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. PREREQ: Acceptance into the Medical Laboratory Science Program. F

### **MLS 4412 Urinalysis and Body Fluids: 1 semester hour.**

Fundamental principles of urine and body fluid analysis with correlation of laboratory methods and practice. PREREQ: Acceptance into the Medical Laboratory Science Program. F

### **MLS 4414 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. F

### **MLS 4416 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: Acceptance into the Medical Laboratory Science Program. F

### **MLS 4418 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. F

### **MLS 4420 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. F

### **MLS 4422 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. F

### **MLS 4424 Medical Laboratory Fundamentals: 1 semester hour.**

Theory and application of basic techniques and instruments used in all areas of medical laboratories. PREREQ: Acceptance into the Medical Laboratory Science Program. F

### **MLS 4431 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. PREREQ: MLS 4416 and acceptance into the Medical Laboratory Science Program. S

### **MLS 4433 Medical Laboratory Science 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. S

### **MLS 4435 Molecular Diagnosis: 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. S

### **MLS 4437 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. S

### **MLS 4439 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 4422 and acceptance into the Medical Laboratory Science Program. S

### **MLS 4441 MLS 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. S

### **MLS 4455 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). PREREQ: Acceptance into the Medical Laboratory Science Program. S

### **MLS 4482 Independent Problems in MLS: 1-3 semester hours.**

Individual work under staff guidance. Research on specific educational problems of interest to majors in Medical Laboratory Science. Students are assigned to, or request assignment to, independent problems on the basis of interest and preparation. May be repeated for a maximum of 3 credits. D

### **MLS 4490 General Site Practicum: 1-6 semester hours.**

Structured medical laboratory experiences as determined by Medical Laboratory Science faculty. PREREQ: Permission of Program Director. Graded S/U. F, S, Su

### **MLS 4491 Microbiology Practicum: 2 semester hours.**

Structured medical laboratory experiences as determined by Medical Laboratory Science faculty. PREREQ: Permission of Program Director. Graded S/U. F, S, Su

### **MLS 4492 Hematology and Urinalysis Practicum: 2 semester hours.**

Structured medical laboratory experiences as determined by Medical Laboratory Science faculty. PREREQ: Permission of Program Director. Graded S/U. F, S, Su

### **MLS 4493 Transfusion Blood Bank Practicum: 1 semester hour.**

Structured medical laboratory experiences as determined by Medical Laboratory Science faculty. PREREQ: Permission of Program Director. Graded S/U. F, S, Su

### **MLS 4494 Chemistry and Automation Practicum: 1 semester hour.**

Structured medical laboratory experiences as determined by Medical Laboratory Science faculty. PREREQ: Permission of Program Director. Graded S/U. F, S, Su

### **MLS 4499 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.