CLS 4114 Clinical Microbiology I (2 credit hours)
Principles of clinical microbiology with emphasis on pathogenic characteristics, isolation, and identification of bacteria and viruses related to human disease. The course focuses on the theoretical approach to the current diagnostic techniques and identification systems used in clinical practice. Various topics, including disease causation, specimen collection and handling, laboratory identification and treatment of medically significant bacteria and viruses will be discussed.

CLS 4115 Clinical Parasitology and Mycology (1 credit hour)
This course covers the principles and procedures involved in the diagnosis of parasitic and fungal infections. Various topics, including disease causation, specimen collection and handling, laboratory identification and treatment of medically significant fungi and parasites will be discussed.

CLS 4118 Laboratory Operations (1 credit hour)
Basic concepts applicable to all areas of the clinical laboratory. Quality assurance and quality control, laboratory safety, including federal regulations, and related topics.

CLS 4120 Urinalysis and Body Fluids (1 credit hour)
Evaluation of urine and other body fluids for the presence of disease; clinical correlations.

CLS 4124 Clinical Microbiology II (2 credit hours)
Principles of clinical microbiology, with emphasis on pathogenic characteristics, isolation and identification of organisms related to human disease.

CLS 4128-4129 Hematology I and II (2 credit hours each)
Principles of laboratory detection, clinical correlation, and pathophysiology of human blood cell diseases and disorders of hemostasis.

MLS MAJOR COURSES

CLS 4140 Clinical Laboratory Management (3 credit hours)
Basic concepts of laboratory management, including organizational principles, financial management of resources, decision-making and problem-solving skills, human resource management.

CLS 4141 Immunology and Serology (3 credit hours)
Principles of the immune system’s components, functions, interactions with microorganisms, and the clinical applications of immunologic assays to human health and disease.

CLS 4145 Clinical Biochemistry I (3 credit hours)
This course studies the methodologies employed in the chemical analysis of human blood and body fluids. This includes an examination of the fundamentals of measurement and the principles of instrumentation as they relate to the assay of each analyte studied. In addition, the laboratory results are correlated with the clinical significance and pathophysiology which may generate changes in the analyte. Throughout the course, the quality assurance measures required to ensure reliability and validity of the laboratory results will also be emphasized.

CLS 4150 Immunohematology (3 credit hours)
This course explores the major blood group systems that impact the practice of transfusion medicine and examines the processing and distribution of blood products supplied by transfusion services. Major topics covered in this one-semester course include: 1- donor selection and the collection, preparation, and storage of blood products, 2 - the prevention of transfusion reactions through identification of unsuspected antibodies and compatibility testing, and 3- the recognition of transfusion-associated conditions and diseases. In addition, quality assurance and compliance measures in blood banking are reviewed.

CLS 4155 Clinical Biochemistry II (2 credit hours)
This second course in clinical biochemistry continues the study of the measurement and interpretation of chemical constituents in human blood and body fluids. The laboratory results of each analyte are correlated with the clinical significance and pathophysiology, which may generate changes in the analyte. Throughout the course, the quality assurance measures required to ensure reliability and validity of the laboratory results will also be emphasized.

CLS 4159 Capstone Seminar (1 credit hour)
Integrative application of content from the didactic and practicum courses within the various laboratory disciplines, including Laboratory Operations, Hematology, Microbiology, Chemistry, Immunology, Immunohematology, Urinalysis and Body Fluids, Molecular Diagnostics and Laboratory Management.
CLS 4160 Blood Bank Practicum

(3 credit hours)

The Blood Bank Clinical Practicum is a 3-week, required clinical rotation for students in the BSHS in MLS or the post-baccalaureate MLS or Blood Banking certificate programs. During this practicum course, the student will actively engage in applying the medical knowledge and clinical skills gained in the didactic Immunohematology course (CLS 4150).

CLS 4161 Clinical Biochemistry Practicum

(4 credit hours)

The Clinical Biochemistry Practicum is a 4-week, required clinical rotation for students in the BSHS in MLS or the post-baccalaureate MLS and Clinical Chemistry certificate programs. During this practicum course, the student will actively engage in applying the medical knowledge and clinical skills gained in the didactic Clinical Biochemistry I (CLS 4145) and Clinical Biochemistry II (CLS 4155) courses.

CLS 4162 Hematology and Hemostasis Practicum

(3 credit hours)

The Hematology and Hemostasis Practicum is a 3-week, required rotation for students in the BSHS in MLS or the post-baccalaureate MLS or Hematology certificate programs. During this practicum course, the student will actively engage in applying the medical knowledge and clinical skills gained in the didactic Hematology I (CLS 4128) and Hematology II (CLS 4129) courses.

CLS 4163 Clinical Immunology and Serology Practicum

(1 credit hour)

The Clinical Immunology and Serology Practicum is a one week, required clinical rotation for students in the BSHS in MLS or the post-baccalaureate MLS and Blood Bank certificate programs. During this practicum course, the student will actively engage in applying the medical knowledge and clinical skills gained in the didactic Immunology and Serology course (CLS 4141).

CLS 4164 Clinical Microbiology Practicum

(4 credit hours)

The Clinical Microbiology Practicum is a 4-week, required clinical rotation for students in the BSHS in MLS or the post-baccalaureate MLS and Clinical Microbiology certificate programs. During this practicum course, the student will actively engage in applying the medical knowledge and clinical skills gained in the didactic Clinical Microbiology I (CLS 4114), Clinical Microbiology II (CLS 4124) and Molecular Diagnostics courses (CLS 4151).

CLS 4165 Urinalysis and Body Fluids Practicum

(1 credit hour)

The Urinalysis and Body Fluids Practicum is a one week, required clinical rotation for students in the BSHS in MLS or post-baccalaureate MLS certificate program. During this practicum course, the student will actively engage in applying the medical knowledge and clinical skills gained in the didactic Urinalysis and Body Fluids course (CLS 4120).