### CL_L_S 1000: Orientation to Clinical Laboratory Science
The class is designed to give prospective Clinical Laboratory Science students clinical experience in the field of Clinical Laboratory Science. Graded on S/U basis only.

**Credit Hour:** 1
**Prerequisites:** HLTH_SCI 1000

### CL_L_S 4407: Clinical Laboratory Operations
This course provides a basic introduction to the theory, practical application, technical performance and evaluation of laboratory skills specific to the practice of clinical laboratory science. Laboratory safety; microscopy; pipetting; general laboratory equipment; quality control; mathematics; phlebotomy; pre-analytic, analytic and post-analytic processes, including specimen collection, processing and transport to maintain test result integrity, will be addressed. Graded on A-F basis only.

**Credit Hour:** 1-4
**Prerequisites:** Restricted to Clinical Laboratory Students only

### CL_L_S 4408: Introduction to Clinical Hematology
This course introduces the theory, practical application, technical performance and evaluation of hematological and hemostasis procedures. Correlation of laboratory data with the diagnosis of erythrocyte, leukocyte and bleeding/clotting disorders will be introduced. Graded on A-F basis only.

**Credit Hour:** 1-4
**Prerequisites:** Restricted to Clinical Laboratory Students only

### CL_L_S 4409: Introduction to Clinical Microbiology
This course introduces the theory, practical application, technical performance and evaluation of procedures for isolation, identification and susceptibility testing of infectious disease organisms in humans. The course primarily focuses on bacteriology, but will include introductory coverage of parasitology, mycology and virology. Graded on A-F basis only.

**Credit Hour:** 1-4
**Prerequisites:** Restricted to Clinical Laboratory Students only

### CL_L_S 4410: Introduction to Clinical Chemistry and Urinalysis
This course introduces the theory, practical application, technical performance and evaluation of basic laboratory skills and methods in clinical chemistry and urinalysis. The course focuses on the correlation of laboratory data with the diagnosis of renal conditions, but will include introductory coverage of carbohydrate, liver and protein conditions, as well as enzymes. Graded on A-F basis only.

**Credit Hour:** 1-4
**Prerequisites:** Restricted to Clinical Laboratory Students only

### CL_L_S 4411: Introduction to Clinical Immunohematology
This course introduces the theory, practical application, technical performance and evaluation of immunohematology procedures required to provide compatible blood components for transfusion. Methods for collection, processing, storage and transfusion of blood and blood components will be presented. Immunohematology procedures that assist in the diagnosis and management of hemolytic conditions will be introduced. Graded on A-F basis only.

**Credit Hour:** 1-4
**Prerequisites:** Restricted to Clinical Laboratory Students only

### CL_L_S 4412: Clinical Laboratory Science Theory, Application and Correlation
Application, evaluation and correlation of laboratory procedures used in the diagnosis and treatment of common disease states. Opportunities for building critical thinking, problem solving, and leadership skills are provided in small group clinical case discussions. Course may be repeated for credit. Graded on A-F basis.

**Credit Hours:** 5
**Prerequisites:** departmental consent, accepted into the Medical Technology Program

### CL_L_S 4413: Clinical Endocrinology and Toxicology
This course introduces the theory, practical application, and evaluation of clinical chemistry laboratory procedures. Correlation of clinical laboratory data with the diagnosis and treatment of endocrine disorders, toxicology disturbances and therapeutic drug monitoring is emphasized. Graded on A-F basis only.

**Credit Hour:** 1-4
**Prerequisites:** Restricted to Clinical Laboratory Students only

### CL_L_S 4414: Chemistry I
Introduction to theory, practical application, technical performance and evaluation of clinical chemistry laboratory procedures.

**Credit Hour:** 1-4
**Prerequisites:** departmental consent, accepted into the Medical Technology Program. May be repeated for credit. Graded on A-F basis only

### CL_L_S 4415: Chemistry II
Advanced theory, practical application, technical performance and evaluation of clinical chemistry laboratory procedures. May be repeated for credit. Graded on A-F basis only.

**Credit Hours:** 3
**Prerequisites:** departmental consent, accepted into the Medical Technology Program

### CL_L_S 4416: Clinical Hematology I
Introduction to the theory, practical application, technical performance and evaluation of hematological and coagulation procedures. Emphasis on correlations of clinical laboratory data with the diagnosis and treatment of anemia, leukemia, and bleeding/clotting disorders. May be repeated for credit. Graded on A-F basis only.

**Credit Hour:** 1-4
**Prerequisites:** departmental consent, accepted into the Medical Technology Program
CL_L_S 4417: Clinical Hematology II
Advanced theory, practical application, technical performance and evaluation of hematological and coagulation procedures. Emphasis on the correlation of clinical laboratory data with the diagnosis and treatment of anemia, leukemia, and bleeding/clotting disorders. May be repeated for credit. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: departmental consent, accepted into the Medical Technology Program

CL_L_S 4418: Clinical Microbiology I
Introduction to the theory, practical application, technical performance and evaluation of procedures for isolation, identification and susceptibility testing of infectious disease organisms in humans. May be repeated for credit. Graded on A-F basis only.

Credit Hour: 1-4
Prerequisites: departmental approval, accepted into the Medical Technology Program

CL_L_S 4419: Clinical Microbiology II
Advanced theory, practical application, technical performance and evaluation procedures for isolation, identification and susceptibility testing of infectious disease in humans; bacteriology, mycology, parasitology, virology and serology and correlation of data with diagnosis and treatment. May be repeated for credit. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: departmental approval, accepted into the Medical Technology Program

CL_L_S 4420: Clinical Immunology
Theory, practical application, technical performance and evaluation of immunological components; principles and methods used to assess immunologically-related disorders, including hypersensitivity reactions, autoimmune, immunoproliferative and immunodeficiency disorders, tumors and transplantations. May be repeated for credit. Graded on A-F basis only.

Credit Hour: 1
Prerequisites: departmental approval, accepted into the Medical Technology Program

CL_L_S 4422: Immunohematology I
Introduction to the theory, practical application, technical performance and evaluation of blood bank procedures required for transfusion of blood and blood components and for handling and storage of blood and blood components. May be repeated for credit. Graded on A/F basis only.

Credit Hour: 1-4
Prerequisites: departmental approval, accepted into the Medical Terminology Program

CL_L_S 4423: Immunohematology II
Advanced theory, practical application, technical performance and evaluation of blood bank procedures required for transfusion of blood and blood components and for handling and storage of blood and blood components. May be repeated for credit. Graded on A-F basis only.

Credit Hours: 2
Prerequisites: departmental approval, accepted into the Medical Technology Program

CL_L_S 4424: Phlebotomy
Theory, practical application, technical performance and evaluation of procedures used in collecting, handling and processing blood specimens. May be repeated for credit. Graded on S/U basis only.

Credit Hour: 1
Prerequisites: departmental approval, accepted into the Medical Technology Program

CL_L_S 4426: Body Fluid Analysis
Theory, practical application, technical performance and evaluation of procedures used in the analysis of urine and other body fluids, including cerebrospinal, synovial, serous, seminal, amniotic and feces. May be repeated for credit. Graded on A-F basis only.

Credit Hour: 1
Prerequisites: departmental consent, accepted into the Medical Technology Program

CL_L_S 4428: Clinical Immunohematology Laboratory Practicum I
This course provides practical application in a clinical laboratory setting for the technical performance and evaluation of clinical immunohematology procedures and preparation of blood components. Course content will include new skills and procedures, in addition to the skills and procedures presented in CL_L_S 4407 Clinical Laboratory Operations and CL_L_S 4411 Introduction to Clinical Immunohematology. Graded on A-F basis only.

Credit Hour: 1-4
Prerequisites: Restricted to Clinical Laboratory Students only

CL_L_S 4430: Clinical Immunohematology Laboratory Practicum II
This course provides practical application in a clinical laboratory setting for the technical performance and evaluation of clinical immunohematology procedures and preparation of blood components. Course content will include new skills procedures, in addition to the skills presented in CL_L_S 4442 Clinical Immunohematology Laboratory Practicum I. Graded on A-F basis only.

Credit Hour: 1-4
Prerequisites: Restricted to Clinical Laboratory Students only

CL_L_S 4443: Clinical Immunohematology Laboratory Practicum I
This course provides practical application in a clinical laboratory setting for the technical performance and evaluation of clinical immunohematology procedures and preparation of blood components. Course content will include new skills and procedures and the application of automation and automatic verification techniques, building on the skills and procedures presented in CL_L_S 4407 Clinical Laboratory Operations, CL_L_S 4408 Introduction to Clinical Hematology and CL_L_S 4410 Introduction to Clinical Chemistry and Urinalysis. Graded on A-F basis only.

Credit Hour: 1-4
Prerequisites: Restricted to Clinical Laboratory Students only

CL_L_S 4445: Clinical Core Laboratory Practicum II
This course provides practical application in a clinical laboratory setting for the technical performance and evaluation of clinical hematology/hemostasis, chemistry and urinalysis procedures. Course content will include new skills and procedures, in addition to the skills and procedures presented in CL_L_S 4442 Clinical Immunohematology Laboratory Practicum I. Graded on A-F basis only.
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presented in CL_L_S 4444 Clinical Core Laboratory Practicum. Graded on A-F basis only.

Credit Hour: 1-4
Prerequisites: Restricted to Clinical Laboratory Students only

CL_L_S 4448: Clinical Microbiology Laboratory Practicum I
This course provides practical application in a clinical laboratory setting for the technical performance and evaluation of clinical microbiology procedures. Course content will include new skills and procedures, in addition to the skills and procedures presented in CL_L_S 4407 Clinical Laboratory Operations and CL_L_S 4409 Introduction to Clinical Microbiology. Graded on A-F basis only.

Credit Hour: 1-4
Prerequisites: Restricted to Clinical Laboratory Students only

CL_L_S 4449: Clinical Microbiology Laboratory Practicum II
This course provides practical application in a clinical laboratory setting for the technical performance and evaluation of clinical microbiology procedures. Course content will include new skills and procedures, in addition to the skills and procedures presented in CL_L_S 4448 Clinical Microbiology Laboratory Practicum I. Graded on A-F basis only.

Credit Hour: 1-4
Prerequisites: Restricted to Clinical Laboratory Students only

CL_L_S 4970: Clinical Laboratory Management I
Theory, practical application and evaluation of laboratory management principles and associated models in communication, educational methodology, healthcare systems and financial resources. Opportunities for building critical thinking, problem-solving, and management/professional leadership skills are provided. May be repeated for credit. Graded on A-F basis only.

Credit Hours: 2
Prerequisites: departmental approval, accepted into the Medical Technology Program

CL_L_S 4980: Clinical Lab Management II
Continuation of Clinical Lab Management I. Theory, practical application, and evaluation of laboratory management principles and associated models in compliance and regulatory issues, human resource management, method evaluation, professionalism and laboratory quality. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: CL_L_S 4970 or departmental consent

CL_L_S 4980W: Clinical Lab Management II - Writing Intensive
Continuation of Clinical Lab Management I. Theory, practical application, and evaluation of laboratory management principles and associated models in compliance and regulatory issues, human resource management, method evaluation, professionalism and laboratory quality. Graded on A-F basis only.

Credit Hours: 3
Prerequisites: CL_L_S 4970 or departmental consent