

CLINICAL LAB SCIENCES (CLS)

 - General Education Course

CLS 105  Medical-Lab Terminology (CT)	3 Credit hours
An introductory course for students to develop critical thinking skills and apply them to medical and laboratory terminology concepts and other health care topics related to laboratory medicine.	
Attributes: Critical Thinking	
Grade Mode: Normal Grading Mode	
CLS 200 Clinical Biochemistry	4 Credit hours
Theory and practice of clinical chemistry testing of serum, plasma, urine and body fluids in disease diagnosis.	
Grade Mode: Normal Grading Mode	
CLS 210 Clinical Immunohematology	4 Credit hours
Theory of immune mechanisms in the body with a focus on serological testing for safe transfusion of blood components and applications for diagnostic immunologic assays.	
Pre-req: CLS 230 with a minimum grade of C and CLS 200 with a minimum grade of C.	
Grade Mode: Normal Grading Mode	
CLS 220 Clinical Microbiology	4 Credit hours
A study of bacterial, fungal, and helminth related diseases, including diagnostic approach and techniques. 3 lec-2 lab.	
Pre-req: CLS 230 with a minimum grade of C and CLS 200 with a minimum grade of C.	
Grade Mode: Normal Grading Mode	
CLS 230 Clinical Hematology	4 Credit hours
Theory and clinical laboratory procedures used in the diagnosis of various white blood cell, red blood cell, and coagulation disorder. Course includes an introduction to specimen collection.	
Grade Mode: Normal Grading Mode	
CLS 255 Clinical Lab Problems	3 Credit hours
Clinical laboratory problem-solving and comprehensive technical review course designed to help the student integrate knowledge and learn professional skills as a last step before beginning clinical practicum.	
Pre-req: CLS 230 with a minimum grade of C and CLS 200 with a minimum grade of C.	
Grade Mode: Normal Grading Mode	
CLS 270 Clin Practicum Hematology	3 Credit hours
Total of 4 weeks (160 hours) of hospital-based supervised practice, including phlebotomy, complete blood counts, body fluid analysis, clinical microscopy, and urinalysis. One of four courses, CLS 270-273, taken concurrently.	
Pre-req: CLS 255 with a minimum grade of C.	
Co-req: CLS 271, CLS 272, CLS 273	
Grade Mode: Normal Grading Mode	
CLS 271 Clin Practicum Chemistry	3 Credit hours
Total of 4 weeks (160) hours of hospital-based supervised practice performing diagnostic tests on body fluids using chemical methods. One of four courses, CLS 270-273, taken concurrently.	
Pre-req: CLS 255 with a minimum grade of C.	
Co-req: CLS 270, CLS 272, CLS 273	
Grade Mode: Normal Grading Mode	
CLS 272 Clin Pract Immunohematol	3 Credit hours
Total of 3 weeks (120) hours of hospital-based supervised practice performing blood typing, antibody screening and identification, and conduct of pre-transfusion tests. One of our courses, CLS 270-273, taken concurrently.	
Pre-req: CLS 255 with a minimum grade of C.	
Co-req: CLS 270, CLS 271, CLS 273	
Grade Mode: Normal Grading Mode	
CLS 273 Clin Pract Microbiology	3 Credit hours
Total of 4 weeks (160 hours) of hospital-based supervised practice performing isolation, identification, and susceptibility testing of bacteria, fungi, and parasites. One of four courses, CLS 270-273, taken concurrently.	
Pre-req: CLS 255 with a minimum grade of C.	
Co-req: CLS 270, CLS 271, CLS 272	
Grade Mode: Normal Grading Mode	
CLS 285 Independent Study	1-4 Credit hours
Attributes: No Textbook Required	
Grade Mode: Normal Grading Mode	
CLS 286 Independent Study	1-4 Credit hours
Grade Mode: Normal Grading Mode	
CLS 287 Independent Study	1-4 Credit hours
Grade Mode: Normal Grading Mode	
CLS 288 Independent Study	1-4 Credit hours
Grade Mode: Normal Grading Mode	
CLS 310 Clin Immun & Mol Diag	3 Credit hours
Theory and practice of basic human immunology and genetics as applied to clinical laboratory diagnostic and treatment procedures. Emphasizes use of immunoglobulin and DNA as diagnostic tools.	
Grade Mode: Normal Grading Mode	
CLS 320 Advanced Topics in CLS	3 Credit hours
Study of advanced topics for MLS graduates; includes careers in CLS, public health, epidemiology and bioterrorism as related to CLS, interprofessional collaboration, professional societies, licensure and regulation, and patient safety.	
Grade Mode: Normal Grading Mode	
CLS 400 Adv Clinical Chemistry	2 Credit hours
Advanced theory, practice, problem solving, and critical thinking in the laboratory specialty of clinical chemistry.	
Pre-req: CLS 200 with a minimum grade of C.	
Grade Mode: Normal Grading Mode	
CLS 410 Adv Clin Immunohematology	2 Credit hours
Advanced theory and resolution of complex serological problems related to blood component therapy and transfusion.	
Pre-req: CLS 272 with a minimum grade of C.	
Grade Mode: Normal Grading Mode	
CLS 420 Adv Clinical Microbiology	2 Credit hours
Advanced theory, practice, problem solving, and critical thinking in the laboratory specialty of diagnostic microbiology.	
Grade Mode: Normal Grading Mode	
CLS 430 Adv Clinical Hematology	3 Credit hours
Advanced theory, problem solving, and clinical laboratory procedures used in the diagnosis and treatment of various white blood cell, red blood cell, and coagulation disorders.	
Pre-req: CLS 230 with a minimum grade of C.	
Grade Mode: Normal Grading Mode	

CLS 460 Clinical Lab Mgt and Educ 3 Credit hours

Laboratory personnel and resource management, cost control, cost analysis, lab marketing, accreditation and CLS education practices.

Pre-req: MGT 320 with a minimum grade of C or ECN 250 with a minimum grade of C and CLS 271 with a minimum grade of C.

Grade Mode: Normal Grading Mode

CLS 464 Lab Instrumen Inform Sys 3 Credit hours

Principles of laboratory instrumentation operation, maintenance, and troubleshooting. Concepts in special topics such as Flow Cytometry, Laboratory Information Systems (LIS), and Schematics also discussed.

Grade Mode: Normal Grading Mode

CLS 466 Diagnostic Physiology 3 Credit hours

Pathologic aspects of diseases will be discussed using case studies, diagnostic problem solving, and student projects.

Grade Mode: Normal Grading Mode

CLS 468  Clinical Lab Research 3 Credit hours

Directed independent research in the clinical site on a subject/topic of interest for clinical laboratory practice; formal writing of a research proposal and final project report required.

Attributes: Capstone Course, No Textbook Required

Grade Mode: Normal Grading Mode

CLS 472 Adv CLS Clinical Practicum I 3 Credit hours

Advanced problem solving and critical thinking through case study evaluation in all areas of the clinical laboratory.

Grade Mode: Normal Grading Mode

CLS 473 Adv CLS Clinical Practicum II 3 Credit hours

Advanced problem solving and critical thinking in all areas of the clinical laboratory through intensive review of theory and national certification examination review materials for the Medical Laboratory Scientist.

Grade Mode: Normal Grading Mode

CLS 480 Special Topics 1-4 Credit hours

Grade Mode: Normal Grading Mode

CLS 481 Special Topics 1-4 Credit hours

Grade Mode: Normal Grading Mode

CLS 482 Special Topics 1-4 Credit hours

Grade Mode: Normal Grading Mode

CLS 483 Special Topics 1-4 Credit hours

Grade Mode: Normal Grading Mode

CLS 485 Independent Study 1-4 Credit hours

Attributes: No Textbook Required

Grade Mode: Normal Grading Mode

CLS 486 Independent Study 1-4 Credit hours

Grade Mode: Normal Grading Mode

CLS 487 Independent Study 1-4 Credit hours

Grade Mode: Normal Grading Mode

CLS 488 Independent Study 1-4 Credit hours

Grade Mode: Normal Grading Mode

CLS 499 Seminar in Lab Medicine 2 Credit hours

Review, summary and critique of peer-reviewed research publications in all areas of clinical laboratory science.

Grade Mode: Normal Grading Mode