

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 laboratory testing of serum, plasma, urine, body fluids in disease diagnosis. 3 lec-2 lab.	
Grade Mode: Normal Grading Mode	
CLS 210 Clinical Immunohematology	4 Credit hours
Theory of immune mechanisms in the body and applications for diagnostic testing and blood transfusion. 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 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 practice of clinical laboratory tests of red and white blood cells, as well as blood clotting. 3 lec-3 lab.	
Grade Mode: Normal Grading Mode	
CLS 255 Clinical Lab Problems	3 Credit hours
Case studies of instrumental and diagnostic problems encountered by the laboratory technician. 3 lec.	
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 practice, performance of diagnostic tests of blood cells, urine, coagulation, and clinical microscopy under supervision. 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 on-campus laboratory practice in clinical hematology and blood banking. Students learn in-depth diagnostic work-up and problem solving involving patients with anemia, leukemia, and bleeding disorders.	
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	CLS 499 Seminar in Lab Medicine	2 Credit hours
Advanced theory in clinical hematology. Students learn in-depth diagnostic work-up problem solving involving patients with anemia, leukemia, and bleeding disorders.		For Medical Technology students. Students and faculty present and critique articles from recent clinical laboratory-related publications.	
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 instrumental electronics and data systems; interpretation of instrumental outputs, troubleshooting, computerized statistical methods. 2 lec- 2 lab.			
Grade Mode: Normal Grading Mode			
CLS 466 Diagnostic Physiology	3 Credit hours		
Pathologic aspects of laboratory medicine with case studies, diagnostic problem solving, student projects. 3 lec.			
Grade Mode: Normal Grading Mode			
CLS 468 🌱 Clinical Lab Research	3 Credit hours		
Directed independent research in a subject of practical interest in clinical laboratory practice. One of three courses, CLS 468, 471, 491, taken concurrently.			
Attributes: Capstone Course, No Textbook Required			
Grade Mode: Normal Grading Mode			
CLS 472 Adv CLS Clinical Practicum I	1-3 Credit hours		
Advanced theory, practice, problem solving, and critical thinking in the clinical laboratory areas of clinical hematology and/or transfusion services.			
Grade Mode: Normal Grading Mode			
CLS 473 Adv CLS Clinical Practicum II	1-3 Credit hours		
Advanced theory, practice, problem solving, and critical thinking in the clinical laboratory areas of clinical chemistry and/or clinical microbiology.			
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			