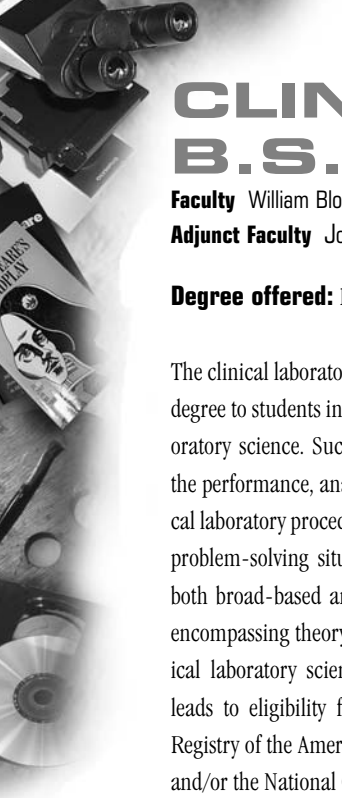


CLINICAL LABORATORY SCIENCE, B.S.

Faculty William Bloemer, Wayne Gade, Paula Garrott, James Veselenak

Adjunct Faculty Joan Barenfanger, John Dietrich, Robbin Killam, Gilma Roncancio, Kim Stahl, Judy Sutherland, Tina Walke

Degree offered: Bachelor of Science

The clinical laboratory science program offers the B.S. degree to students interested in careers in clinical laboratory science. Such careers require competence in the performance, analysis, and interpretation of clinical laboratory procedures and the ability to function in problem-solving situations. The curriculum features both broad-based and selective learning experiences encompassing theory and practice in all areas of clinical laboratory science. Completion of the program leads to eligibility for certification by the Board of Registry of the American Society of Clinical Pathology and/or the National Credentialing Agency for Laboratory Personnel. The UIS clinical laboratory science program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

Contact: Information about the clinical laboratory science program is available at (217) 206-6589. Information can also be requested at cls@uis.edu.

ENTRANCE REQUIREMENTS/ADVISING

The clinical laboratory science program provides for the continuing education of students who have completed the first two years of lower-division work (preferably with the A.A. or A.S. degree). Prerequisite courses required for admission include 1) 90 quarter hours or 60 semester hours of lower-division courses, including the UIS general education requirements detailed in the admissions section of this catalog; 2) two semesters of general chemistry; 3) one semester of organic chemistry; 4) two semesters of biological sciences, preferably at least one semester of anatomy and physiology; 5) one semester of statistics or higher mathematics; and 6) one semester of microbiology with lab. Recommended courses include genetics, a second semester of organic chemistry, and computer software use (word processing, spreadsheets). Normal time of entry into the program is the fall semester of the junior year; however, midyear part-time status is possible.

Since program enrollment is limited, admission to UIS does not guarantee admission to the clinical laboratory science program. In addition to completing the UIS application process, interested applicants should contact the program for a program application. Applicants must also forward a written statement of their academic and professional goals and the names and addresses of two college science instructors (preferably one biology and one chemistry) for use as references to the clinical laboratory science program director. A personal interview may be required.

UIS REQUIREMENTS

Students are required to complete a minimum of 12 semester hours of UIS requirements in the areas of liberal studies colloquia, public affairs colloquia, and applied study. These hours must include at least four hours in each of at least two of these areas.

PROGRAM FEATURES/REQUIREMENTS

The clinical laboratory science program requires 60-66 credit hours of upper-division work. Interdisciplinary and problem-oriented, with emphasis on the basic sciences and standards of contemporary clinical laboratory science, the program includes academic and clinical experiences.

Academic work during the junior year is designed to provide a strong background in analytical chemistry, biochemistry, microbiology, and immunology. The summer and fall terms of the senior year provide theory and laboratory experience in clinical chemistry, hematology, immunohematology, and hemostasis. During the balance of the senior year, the student's clinical education encompasses rotations through the various clinical specialty areas of affiliated hospital laboratories. The program is affiliated with Memorial Medical Center and St. John's Hospital in Springfield, Methodist Medical Center in Illinois in Peoria, Decatur Memorial Hospital, and St. Mary's Hospital in Decatur.

The applied study term is incorporated in the clinical experience, which is under the joint supervision of faculty at the University of Illinois at Springfield and practicing professionals in affiliated hospital laboratories. Clinical education is coupled with didactic courses offered at UIS.

Recognizing the importance of communication in allied health professions, faculty in all CLS courses emphasize development of effective oral and written communication skills. Consequently, completion of CLS required courses constitutes successful demonstration of effective communication skills.

Since the program includes laboratory work done under professional supervision, the degree candidate not only must satisfy the customary expectations of academic work but also must meet the high-quality standards demanded of a professional medical technologist/clinical laboratory scientist. Students must maintain a minimum GPA of 2.00. Clinical laboratory science students are required to maintain a grade of C or better in all required courses.

Individual professional liability insurance is required of each student. Evidence of current coverage must be submitted before engaging in clinical course work.

As a closure requirement for graduation, students must pass a comprehensive examination covering all aspects of clinical laboratory science.

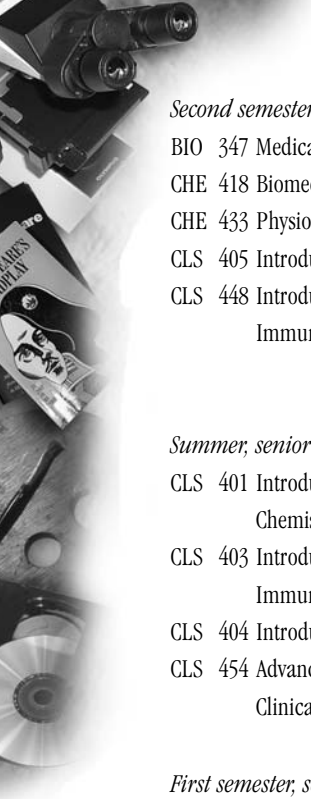
MEDICAL LABORATORY TECHNICIAN (MLT) — CLINICAL LABORATORY SCIENCE (CLS) ARTICULATION

Special opportunities are available for individuals who have completed an associate degree medical laboratory technician program. Through advising and planned academic and clinical course work, medical laboratory technicians are provided a unique opportunity to complete the baccalaureate degree without repeating areas in which they are already proficient. Medical laboratory technicians interested in this articulation opportunity should contact the program director to discuss curriculum planning based on their previous academic and clinical experiences.

SAMPLE CURRICULUM/PROGRAM GUIDE

First semester, junior year

CHE 321	Chemical Analysis	3 Hrs.
CHE 322	Laboratory Techniques	1 Hr.
CLS 321	Seminar in Clinical Laboratory Science	1-2 Hrs.
CLS 447	Medical Mycology/Parasitology/ Virology	1-4 Hrs.
Elective		1-4 Hrs.
Public Affairs/Liberal Studies Colloquium		4 Hrs.
		11-18 Hrs.



Second semester, junior year

BIO	347 Medical Bacteriology	4 Hrs.
CHE	418 Biomedical Laboratory Methods	2 Hrs.
CHE	433 Physiological Chemistry	4 Hrs.
CLS	405 Introduction to Urinalysis	1-2 Hrs.
CLS	448 Introduction to Immunology	1-4 Hrs.
		10-16 Hrs.

Summer, senior year

CLS	401 Introduction to Clinical Chemistry	1-2 Hrs.
CLS	403 Introduction to Immunohematology	1-2 Hrs.
CLS	404 Introduction to Hemostasis	1 Hr.
CLS	454 Advanced Concepts in Clinical Chemistry	2 Hrs.
		6-8 Hrs.

First semester, senior year

CLS	402 Introduction to Hematology	1-2 Hrs.
CLS	451 Advanced Concepts in Immunohematology	2 Hrs.
CLS	452 Advanced Concepts in Hematology	2 Hrs.
Clinical Courses (see below)		1-10 Hrs.
		6-16 Hrs.

Second semester, senior year

CLS	411 Clinical Education/Management	3 Hrs.
CLS	456 Clinical Correlations	2 Hrs.
Clinical Courses (see below)		1-10 Hrs.
		6-15 Hrs.

CLINICAL COURSES

Students are assigned a number of the following courses in the fall and spring semesters of the senior year. All of the clinical courses should be completed by the end of the senior year.

CLS	421 Clinical Chemistry Laboratory	1-4 Hrs.
CLS	422 Clinical Hematology Laboratory	1-3 Hrs.
CLS	423 Clinical Microbiology Laboratory	1-3 Hrs.
CLS	424 Clinical Immunohematology Laboratory	1-2 Hrs.
CLS	431 Special Topics in Clinical Laboratory Science	1-2 Hrs.
	Total Clinical	6-14 Hrs.
	Total	60-66 Hrs.

COURSE DESCRIPTIONS

CLS 321 Seminar in Clinical Laboratory Science (1-2 Hrs.)
An introduction to the profession of clinical laboratory science. Laboratory organization, roles, and credentialing of laboratory practitioners are discussed. Standards, ethics, and current professional issues are examined. Communication skill development and review of scientific literature are included. Instruction and experience in blood collection techniques are included.

CLS 400 Applied Research (1 to 4 Hrs.)
Directed research in procedure development or in-depth investigation of a specific area in clinical laboratory science. Topic approved and hours assigned by instructor. Written report required. May be repeated for a maximum of 4 credit hours.

CLS 401 Introduction to Clinical Chemistry (1 or 2 Hrs.)
Lecture/laboratory course focusing on clinical significance and methodology of carbohydrates, proteins, lipids, enzymes, electrolytes, blood gases, acid-base balance, liver function, kidney function, and endocrinology. Emphasis on quality control as it applies to selected clinical chemistry procedures.

CLS 402 Introduction to Hematology (1 or 2 Hrs.)
Lecture/laboratory course that emphasizes basic hematologic principles. Manual and automated procedures are performed. Emphasis on morphology and clinical applications.

CLS 403 Introduction to Immunohematology (1 or 2 Hrs.)
Lecture/laboratory course emphasizing immunohemato-

logic concepts and properties underlying scientific principles of blood banking. Includes theory and practical applications of blood-group systems, antibody identification and compatibility testing, hemolytic disease of the newborn, autoimmune hemolytic anemia, and donor procurement and processing.

CLS 404 Introduction to Hemostasis (1 Hr.)
Lecture/laboratory course that emphasizes components in the blood related to hemostatic mechanisms. Includes principles of procedures involved and their relationship to diagnosis and treatment of disease.

CLS 405 Introduction to Urinalysis (1 to 2 Hrs.)
Lecture/laboratory course emphasizing qualitative, quantitative, and microscopic examination of urine. Includes special analytical procedures and their relationship to diagnosing and monitoring disease.

CLS 411 Clinical Education/ Management (3 Hrs.)
Processes and practices of laboratory consulting and management. Includes basic principles of competency-based education, development of course objectives, evaluation procedures, and teaching techniques.

CLS 421 Clinical Chemistry Laboratory (1 to 4 Hrs.)
Provides an opportunity to apply chemical and immunologic theory and practice to routine and special clinical chemistry procedures, and toxicology, therapeutic drug monitoring, and urinalysis. Also includes immunologic procedures. Includes instruction and experience in the use, standardization, and maintenance of sophisticated laboratory analyzers. Prerequisites: CLS 401, CLS 405, CLS 448, and CLS 454.

CLS 422 Clinical Hematology Laboratory (1 to 3 Hrs.)
Automated and manual methods of cell counting and differentiation are performed on blood and other body fluids. Instruction and experience in advanced instrumentation using automated cell counters and differential systems, coagulation and platelet analyzers, and special hematologic testing of white and red cells using cytochemistry techniques are provided to identify disease states and disorders. Prerequisite: Senior in clinical laboratory science program.

CLS 423 Clinical Microbiology Laboratory (1 to 3 Hrs.)
Isolation and identification of clinically important bacteria, mycobacteria, and fungi including antibiotic susceptibility testing. Techniques for identifying parasites are included. Prerequisite: Senior in clinical laboratory science program.

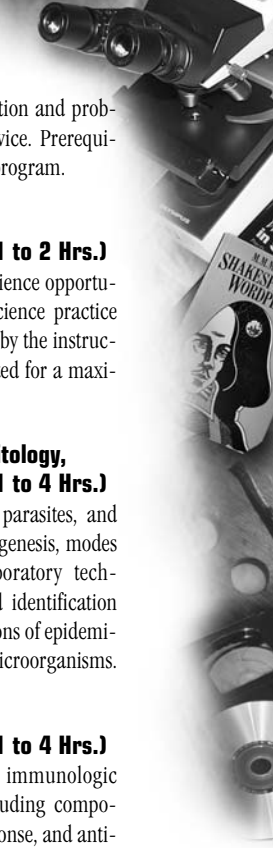
CLS 424 Clinical Immunohematology Laboratory (1 to 2 Hrs.)
Blood typing, antibody screening and identification, compatibility testing, and other immunohematologic procedures are included. Emphasis is on operation and problem-solving in a modern transfusion service. Prerequisite: Senior in clinical laboratory science program.

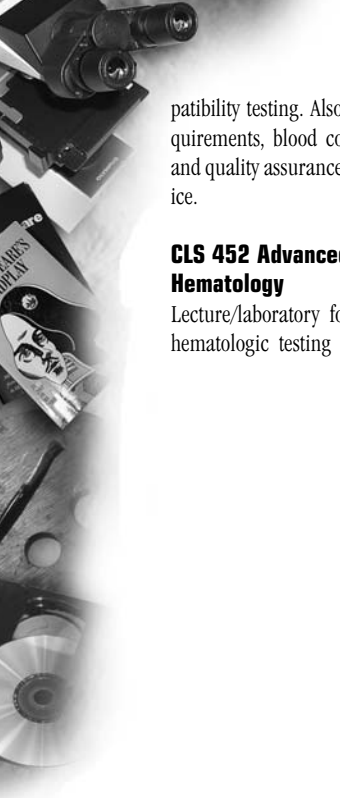
CLS 431 Special Topics in Clinical Laboratory Science (1 to 2 Hrs.)
Directed research and observational experience opportunities in alternative clinical laboratory science practice arenas. Topics and sites must be approved by the instructor. Written report required. May be repeated for a maximum of 2 credit hours.

CLS 447 Medical Mycology, Parasitology, and Virology (1 to 4 Hrs.)
Overview of medically significant fungi, parasites, and viruses. Emphasis will be placed on pathogenesis, modes of transmission, and identification. Laboratory techniques used in isolation, cultivation, and identification will be used. Also included will be discussions of epidemiology and host response regarding these microorganisms.

CLS 448 Introduction to Immunology (1 to 4 Hrs.)
Lecture/laboratory course introducing immunologic principles, concepts, and techniques including components of the immune system, immune response, and antigen-antibody reactions.

CLS 451 Advanced Concepts in Immunohematology (2 Hrs.)
Lecture/laboratory focusing on problem-solving and special techniques used in antibody identification and com-





patibility testing. Also includes a discussion of donor requirements, blood component preparation and therapy, and quality assurance in the blood bank/transfusion service.

CLS 452 Advanced Concepts in Hematology (2 Hrs.)
Lecture/laboratory focusing on advanced principles of hematologic testing leading to improved interpretative skills in hematology. Emphasis on correlation of data with disease states and disorders. Case studies and discussion used to illustrate the pathophysiology of hematological dysfunction.

CLS 454 Advanced Concepts in Clinical Chemistry (2 Hrs.)
Lecture/laboratory focusing on clinical significance and methodology of trace elements, vitamins, therapeutic drug monitoring, and toxicology. Newer testing methods used to identify diseases/disorders will be discussed. Emphasizes instrument selection and method validation process.

CLS 456 Clinical Correlations (2 Hrs.)
Use of problem-based case studies to analyze clinical situations and correlate laboratory data.