Clinical Laboratory Science Program

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www.txstate.edu/cls

The Bachelor of Science in Clinical Laboratory Science with a major in Clinical Laboratory Science prepares students to function as clinical laboratory scientists or medical technologists in a wide variety of settings from physician office laboratories to modern tertiary care hospital laboratories. The clinical laboratory scientist can become an indispensable top-level laboratory worker, a supervisor, a specialist, a researcher, or an educator.

The requirements during the first two years of study include courses in biology, chemistry, and mathematics, along with courses in the humanities and social and behavioral sciences. The junior and senior years combine clinical experiences in the affiliated clinical laboratories with advanced academic study in the CLS disciplines.

The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Graduates of the program are eligible to take the national certification examination for the Medical Laboratory Scientist (MLS) given by the Board of Certification of the American Society for Clinical Pathology (ASCP).

Admission Process

Any student entering Texas State may declare Pre-Clinical Laboratory Science as their major. It is recommended that students arrange academic advising at least once prior to making application, and, if possible, arrange to learn about the profession through clinical laboratory tours, personal research, and interviewing a practicing CLS professional. Admission and acceptance to Texas State and declaration as a clinical laboratory science major does not guarantee admission to the program. Admission to the program is competitive and selective. The academic sequence begins during the fall semester of the junior year. Students are selected in the spring semester of their sophomore year. Enrollment is limited by student/faculty ratios and clinical placement availability. The deadline for submission of applications is February 15. A typical cohort size of 20 students will be admitted. Applicants will be notified of their status by April 30th or sooner. The criteria for student selection for the junior class includes scholastic ability, particularly in the sciences, essays, and a personal interview, and not on the basis of gender, race, color, religion, veteran status or condition of disability, or national origin.

Due to performance standards of the profession, students must meet specific ADA standards in accordance with physical and emotional requirements of the academic program to qualify for admission.

General Admission Requirements

1. Admission to Texas State University. University application deadlines are different than the CLS Program deadline. Potential applicants are encouraged to complete the University process early to facilitate review of transcripts during the CLS Program application process.
2. A minimum overall GPA and science GPA of 2.50; however, an overall GPA and a science GPA of 3.0 is recommended in order to be competitive in the application process.
3. Science courses require a minimum grade of “C” or higher.
4. Students may only have a maximum of 12 remaining prerequisite hours, with only eight of these credit hours in prerequisite science courses. Students are encouraged to complete all prerequisite courses prior to admission.
5. Completion of the CLS application packet for admission by the deadline (February 15th).
6. Successful interview of selected candidate with admission committee.
7. Other requirements as necessary by clinical placements (e.g. immunization, background check, and drug testing).

Program Progression

Successful program progression requires students to complete each semester in a lock-step sequence with a grade of “C” or higher in all major courses. Each course is offered only once each academic year; therefore, progress in the program is affected should a student fall out of the sequence due to failure to successfully complete a course. A student who falls out of sequence (whether due to illness, course failure, or other reasons) will be delayed one year to repeat the course. According to CLS program policy, students with a grade of less than a “C” in a CLS course will be stepped out of the program and individuals must reapply to the program the following year. To be considered for program readmission, all original program admission criteria and an approved schedule for retaking courses must be met. In addition, a student may repeat a CLS course only once. If the student does not earn a grade of at least “C” upon repeating the course, the student cannot continue in the program. All non-CLS coursework must be completed prior to the senior year, 2nd semester (spring), due to students beginning off-campus clinical rotations.

Graduation

To graduate with a Bachelor of Science in Clinical Laboratory Science, students must successfully complete all CLS courses with a “C” or higher. Requirements for BSCLS completion and graduation include a Texas State GPA of 2.0 with a CLS major GPA of 2.25. During the second semester (spring) and final semester (summer) of the senior year, students are required to successfully complete five clinical laboratory rotations/experiences in CLS Clinical Practice courses. These courses require that the students spend clinical time in other facilities, primarily hospitals and reference laboratories, away from campus. Students must furnish their own transportation, and if necessary, housing. Because of the time and distances involved, typically no courses other than those listed in the CLS Program can be taken in the final two semesters of the senior year.

Immunization Requirements

It is a policy of the College of Health Professions that each student must provide a Health Report completed by a physician or licensed healthcare provider, and must take certain immunizations before the student can be placed in a clinical or internship assignment. Information on these requirements and forms to be supplied may be obtained through the program office.

Background Check and Drug Screening

As a condition for placement in professional practice sites, students will be required to have a background check and drug screening and meet other requirements set by individual sites. Information on the drug screening process will be provided by the CLS Program.
Clinical Placement (rotation) Requirements

The Clinical Laboratory Science (CLS) Program at Texas State provides clinical placements for all CLS students entering the clinical year (senior year / 2nd year of post baccalaureate) in good academic standing. Clinical placements are carefully and methodically assigned while taking into account transportation issues, types of clinical affiliates, and student characteristics. In the event a clinical affiliate is unable to fulfill their prior obligation, alternative clinical rotations will be sought at other affiliate institutions. In the very unlikely event alternative clinical rotations are unable to be secured; affected students will be reassigned to the first available rotation site. The next available clinical rotation will occur as soon as possible but no later than one year from the time the rotation was cancelled. If the clinical rotation cancellation occurs after clinical rotations have commenced, the affected student will be placed first in the queue to receive the first available clinical rotation slot that will occur no later than one year after the cancellation. If the clinical rotation cancellation occurs prior to the start of clinical rotations, affected students will be selected based on GPA calculated from performance in the CLS courses. Students with the lowest GPAs will be required to relinquish their clinical rotation slots which will delay clinical rotations.

Bachelor of Science in Clinical Laboratory Science (B.S.C.L.S.)

- Major in Clinical Laboratory Science (http://mycatalog.txstate.edu/undergraduate/health-professions/clinical-laboratory-science-program/bscls)

Information about graduate programs can be found in the Graduate Catalog (http://mycatalog.txstate.edu/graduate).

Courses in Clinical Laboratory Science (CLS)

CLS 3305. Introduction to Clinical Laboratory Techniques. Clinical Laboratory Science students will be introduced to techniques, procedures, and instrumentation commonly used in clinical laboratories. (WI).

3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours. Course Attribute(s): Lab Required Writing Intensive
Grade Mode: Standard Letter
about Introduction to Clinical Laboratory Techniques

CLS 3323. Clinical Microscopy and Analysis of Body Fluids. Study of body fluids present in the various anatomical compartments of the body as they differ in health and disease. Physical and chemical tests, and microscopic examination of select body fluids are performed. About Clinical Microscopy and Analysis of Body Fluids

3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours. Course Attribute(s): Lab Required
Grade Mode: Standard Letter
about Clinical Microscopy and Analysis of Body Fluids

CLS 3326. Medical Parasitology. This course includes lecture and laboratory instruction in medically important parasites producing disease in humans with emphasis on epidemiology, life cycles, identifying characteristics, and pathology of these parasites.

3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours. Grade Mode: Standard Letter
about Medical Parasitology

CLS 3410. Clinical Chemistry I. Designed to acquaint the clinical laboratory science student with some of the concepts, techniques, procedures, and instrumentation used in clinical chemistry.

4 Credit Hours. 3 Lecture Contact Hours. 4 Lab Contact Hours. Course Attribute(s): Lab Required
Grade Mode: Standard Letter
about Clinical Chemistry I

CLS 3412. Hematology/Coagulation I. Qualitative and quantitative evaluation of formed elements of the blood and studies in coagulation abnormalities.

4 Credit Hours. 3 Lecture Contact Hours. 4 Lab Contact Hours. Course Attribute(s): Lab Required
Grade Mode: Standard Letter
about Hematology/Coagulation I

CLS 3424. Clinical Immunology. Principles of immune response and underlying immunologic procedures of diagnostic value are discussed. Lectures and laboratory emphasize detection, identification, nature of antigens and antibodies, and the antigen-antibody reactions encountered.

4 Credit Hours. 3 Lecture Contact Hours. 3 Lab Contact Hours. Course Attribute(s): Lab Required
Grade Mode: Standard Letter
about Clinical Immunology

CLS 4225. Laboratory Management and Supervision. Lectures and discussions of general principles of management and supervision of the clinical laboratory and its personnel. (WI).

2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours. Course Attribute(s): Writing Intensive
Grade Mode: Standard Letter
about Laboratory Management and Supervision

CLS 4227. Introduction to Clinical Practice. Discussion of professional and technical requirements for clinical laboratory science students and their role and responsibilities as a unit of the health care team. (WI).

2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours. Course Attribute(s): Writing Intensive
Grade Mode: Standard Letter
about Introduction to Clinical Practice
Texas State University  

CLS 4318. Hematology II.  
In-depth study of theoretical and practical aspects of clinical hematology and hemostasis with emphasis on principles, methodology, problems encountered, and clinical applications.  
about Hematology II  
3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.  
Course Attribute(s): Lab Required  
Grade Mode: Standard Letter  
about Hematology II

CLS 4321. Directed Study in Clinical Laboratory Science.  
An in-depth study of a narrow range of topics or a related problem in the clinical laboratory sciences. Topics to be announced; may be repeated for credit when topics vary.  
about Directed Study in Clinical Laboratory Science  
3 Credit Hours. 2 Lecture Contact Hours. 6 Lab Contact Hours.  
Course Attribute(s): Exclude from 3-peat Processing|Lab Required  
Grade Mode: Credit/No Credit  
about Directed Study in Clinical Laboratory Science

CLS 4340. Clinical Microbiology II.  
Study of medically important fungi, viruses, chlamydiae, rickettsiae, and advanced topics in clinical microbiology. Automated identification of microorganisms, database management, and epidemiologic techniques will be discussed.  
about Clinical Microbiology II  
3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.  
Course Attribute(s): Lab Required  
Grade Mode: Standard Letter  
about Clinical Microbiology II

CLS 4341. Molecular Diagnostics.  
This course consists of an introduction to the principles, methodologies and applications of molecular diagnostic procedures used in clinical laboratories. Emphasis is placed on the procedures used in the identification of infectious agents that cause human disease, in the diagnosis of inherited diseases, and the diagnosis of cancer.  
about Molecular Diagnostics  
3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.  
Course Attribute(s): Lab Required  
Grade Mode: Standard Letter  
about Molecular Diagnostics

Directed independent research covering the principles of research and development of clinical laboratory methodology. (WI).  
about Research Methods in Clinical Laboratory Science  
3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.  
Course Attribute(s): Lab Required|Writing Intensive  
Grade Mode: Standard Letter  
about Research Methods in Clinical Laboratory Science

CLS 4370. Clinical Chemistry II.  
A study of the theoretical and practical aspects of clinical chemistry. Manual and automated laboratory procedures for quantitative analysis of various body fluids.  
about Clinical Chemistry II  
3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.  
Course Attribute(s): Lab Required  
Grade Mode: Standard Letter  
about Clinical Chemistry II

CLS 4440. Clinical Microbiology I.  
Study of pathogenic and nonpathogenic bacteria, fungi, and viruses with special emphasis on methods of isolation from body fluids, cultural and differential biochemical characteristics of body pathogens.  
about Clinical Microbiology I  
4 Credit Hours. 3 Lecture Contact Hours. 6 Lab Contact Hours.  
Course Attribute(s): Lab Required  
Grade Mode: Standard Letter  
about Clinical Microbiology I

CLS 4460. Immunohematology.  
Study of theoretical and practical consideration of major blood groups with emphasis on grouping and typing, antibody detection and identification, compatibility testing and component therapy in blood transfusion service.  
about Immunohematology  
4 Credit Hours. 3 Lecture Contact Hours. 4 Lab Contact Hours.  
Course Attribute(s): Lab Required  
Grade Mode: Standard Letter  
about Immunohematology

CLS 4463. CLS Clinical Practice I.  
Structured clinical experience assigned on an individual basis for observation, study, and practical application of techniques and methodology in the clinical laboratory.  
about CLS Clinical Practice I  
4 Credit Hours. 0 Lecture Contact Hours. 16 Lab Contact Hours.  
Grade Mode: Standard Letter  
about CLS Clinical Practice I

CLS 4464. CLS Clinical Practice II.  
Continuation of Clinical Laboratory Science Practice I; structured clinical experience assigned on an individual basis for observation, study and practical application of techniques and methodology in the clinical laboratory.  
about CLS Clinical Practice II  
4 Credit Hours. 0 Lecture Contact Hours. 16 Lab Contact Hours.  
Grade Mode: Standard Letter  
about CLS Clinical Practice II