



Clinical Laboratory Sciences

College of Health Sciences

The mission of the Division of Clinical Laboratory Sciences is to help the College of Health Sciences achieve its mission through creative leadership and productivity in clinical laboratory science education, research, and service.

The undergraduate Clinical Laboratory Sciences (CLS) program at the University of Kentucky prepares Clinical Laboratory Scientists who perform laboratory tests that aid in the prevention, diagnosis and treatment of disease. CLS graduates receive training in five major disciplines of the clinical laboratory: immunohematology (blood-banking), clinical chemistry, hematology, immunology, and microbiology. CLS graduates are employed in a variety of health care settings including hospital and private laboratories, clinics, pharmaceutical companies, research institutions, the armed forces, public health centers, and veterinary clinics. In addition to performing clinical laboratory tests, CLS graduates also serve as consultants, managers, sales and technical representatives, and educators.

The Clinical Sciences graduate program offers a unique multidisciplinary masters and doctorate program which addresses the rapidly changing health care environment and selected evolving clinical science disciplines. This program of study provides the opportunity for advanced education and career enhancement for health professionals in the clinical sciences. The master's degree provides a foundation in advanced clinical sciences. Students may specialize in two areas of concentration: Reproductive Laboratory Science and Hematology/Transplantation Science. The Doctor of Science degree provides further study in the emerging field of Hematology and Transplantation Science and advanced research training.

For CLS students in good standing, opportunities are available for international study through the Transatlantic Health Science Consortium and Aalesund University College.

Admission

Admission into the Clinical Laboratory Sciences program is the same for both the 3 + 1 Program and the CLT-to-CLS Option. Admission to the professional program is based on:

- minimum cumulative grade-point average of 2.75 for all courses taken at institutions of higher education;
- three letters of recommendation;
- personal interview scores based on two interviews that focus on identifying the applicant's strengths, commitment to, and knowledge of the profession; and
- completion of the preprofessional requirements.

The **application deadline** for the 3 + 1 Program is April 1. CLT-to-CLS students may apply to any semester.

Preprofessional Requirements

The preprofessional program consists of (1) courses that fulfill the University Studies Program and (2) prerequisite courses required by the CLS program. The University Studies Program (USP) is a program of required subjects that all students of the University of Kentucky must complete in order to receive a baccalaureate degree. See "University Studies Program" on pages 70-74 of the 2004-2005 UK Bulletin for the complete University Studies requirements.

Prerequisite Course Requirements

- 2 semesters of general chemistry with laboratory
- 1 semester general microbiology with laboratory

- 1 semester of human physiology (or combined course in physiology and anatomy)
- 1 semester of statistical methods
- 1 semester of biochemistry (may take CLS 822 to fulfill this requirement)
- 1 semester of immunology (may take CLS 835 to fulfill this requirement)

Professional Course Requirements

CLS 832 Basic Clinical Chemistry	1
CLS 833 Basic Hematology	1
CLS 836 Laboratory Organization and Management	3
CLS 838 Basic Immunohematology	1
CLS 843 Advanced Clinical Hematology and Body Fluid Analysis	3
CLS 844 Advanced Clinical Chemistry	3
CLS 848 Advanced Immunohematology	3
CLS 851 Basic Clinical Microbiology	1
CLS 856 Advanced Clinical Microbiology	4
CLS 860 Blood Collection	1
CLS 881 Immunohematology Practicum	5
CLS 882 Practicum in Clinical Chemistry	5
CLS 883 Practicum in Clinical Hematology	5
CLS 884 Practicum in Clinical Microbiology	5
CLS 890 Laboratory Investigation	3
CSC 528 Laboratory Techniques for Non-CSC Students	2
Subtotal: Professional Course Hours	37

3 + 1 Program

The 10-month CLS professional program is offered on the Lexington campus of the University of Kentucky and encompasses the fourth year of study in the baccalaureate degree program. The program provides sequential instruction in laboratory medicine for the student who has been well prepared in science and mathematics during the first three years of study at the university. Through lecture, laboratory, demonstrations and clinical practica, students are prepared for clinical practice in the modern, automated laboratory. Graduates are eligible to take national certification examinations as Clinical Laboratory Scientists/Medical Technologists.

The program starts in the summer following the student's third year. During the summer session, students are introduced to the structure and regulatory guidelines of the clinical laboratory, and practice basic level clinical laboratory techniques in student laboratories. Following summer courses, students complete short, intense courses in the principles and practices of basic hematology and clinical chemistry. Students then practice in clinical chemistry and hematology laboratories while supported by faculty lectures and demonstrations in advanced topics of these disciplines. Clinical practice is structured to present increasingly complex tasks sequentially.

Following winter break, students complete short, intense courses in the principles and practices of immunohematology and clinical microbiology. After completing lectures which cover basic practice in immunohematology and clinical microbiology, students practice in microbiology and immunohematology laboratories while supported by CLS faculty lectures and demonstrations. At the completion of didactic and skills instruction, students integrate the knowledge that has been gained throughout the professional year by participating in an exploration of critical pathways and evidenced-based decision-making in the clinical laboratory.

Clinical Laboratory Sciences • 2

The CLT-to-CLS Option

The University of Kentucky Center for Rural Health offers a non-traditional CLS program, which provides an opportunity in distance education for place-committed students through an associate-to-baccalaureate degree program. Most instruction is administered through Internet-based instruction for the convenience of working laboratory personnel.

The CLT-to-CLS student is required to complete preprofessional requirements, advanced-level CLS courses and meet the requirements of the CLS clinical experience in hematology, clinical chemistry, immunohematology, and clinical microbiology. The following courses are administered via the Internet:

*CLS 822 Biochemistry for Clinical Sciences	3
*CLS 835 Clinical Immunology	3
CLS 836 Laboratory Organization and Management	3
CLS 843 Advanced Clinical Hematology and Body Fluid Analysis	3
CLS 844 Advanced Clinical Chemistry	3
CLS 848 Advanced Immunohematology	3
CLS 856 Advanced Clinical Microbiology	4

**May be taken as a prerequisite.*

In addition, the student must complete CLS 890, Laboratory Investigation. As part of CLS 890, the student must attend a two-week Capstone experience on the Lexington campus of the University of Kentucky. The student must have completed all prerequisites and be registered for their final CLS courses in order to register for CLS 890.

As working laboratory personnel, CLT-to-CLS students may choose to complete one-to-four courses per semester. The duration of the program is dependent upon the number of courses that the student chooses to complete per semester.

All CLS students are required to meet the clinical experience objectives of the program. Clinical laboratory technicians may earn clinical experience through completion of CLS practica, CLS 881, 882, 883 and 884, or through documentation of previous course or work experience.