

JOB DESCRIPTION

A medical laboratory scientist (MLS), formerly known as a medical technologist (MT) or clinical laboratory scientist (CLS), functions as a medical detective, performing laboratory tests that provide physicians with information that assists them in preventing, diagnosing and treating diseases and maintaining patient wellness.

The medical laboratory scientist performs a wide variety of laboratory tests, ranging from simple dipstick urine tests to complex DNA tests that help physicians assess risk of diseases. Using test results, physicians can uncover diabetes, cancer, heart attacks, infections and many other diseases. Medical laboratory scientists interact with physicians, nurses, pharmacists, and other members of the healthcare team to provide timely, accurate information so the patient can receive the correct medical treatment.

Medical laboratory scientists use sophisticated biomedical instruments and technology, microscopes, complex electronic equipment, computers, and methods requiring manual dexterity to perform tests on blood, body fluids, and tissue specimens. Clinical laboratory testing sections include clinical chemistry, hematology, Immunohematology (Blood Bank), immunology, microbiology and molecular diagnostics.

EMPLOYMENT CHARACTERISTICS

Most medical laboratory scientists are employed in hospital laboratories. Others are employed in physicians' private laboratories, clinics, the armed forces, city, state, and federal health agencies including crime labs, industrial medical laboratories, pharmaceutical houses, and public and private research programs dedicated to the study of specific diseases.

Medical laboratory scientists generally work a 40-hour week. Beginning salary range is between \$41,000 and \$47,000 while the range for five years of experience is \$45,000 to \$55,000. Salaries vary depending on employer and geographic location. The employment outlook is expected to be favorable with 100 percent placement of graduates.

THE MEDICAL LABORATORY SCIENCE CURRICULUM

The Medical Laboratory Science curriculum involves three years (at least 90 credit hours) of study in the College of Arts and Sciences, plus 12 consecutive months of practical and didactic training in medical laboratory science at UT Medical Center in Knoxville. The 50-week certificate program begins the first week of January and accepts a maximum of twelve students each year. The clinical year includes intensive classroom instruction and extensive clinical laboratory experience. Students acquire intellectual skills to help them understand disease processes and gain proficiency in laboratory testing, so they can provide physicians with necessary information to diagnose and treat their patients.

The 3+1 program leads to a Bachelor of Science degree with a major in Medical Laboratory Science. The program is accredited by NAACLS, <http://www.naacls.org>, phone (773) 714-8880; fax (773) 714-8886. A Certificate of Clinical Training will be awarded by UT Medical Center in Knoxville. The student will be eligible for examination by the Board of

Registry of the American Society of Clinical Pathologists, all other national registries, and state laboratory licensure.

The following is a suggested sequence of courses. Please note that the College of Arts and Sciences *Curriculum Guide and Advising Handbook* contains course options for Communicating through Writing, Foreign Language, Social Sciences, Arts and Humanities, Non-US History, Global Challenges, Upper Level Distribution, and Connections. All students pursuing a degree from UT must complete UT's general education requirements (see catalog.utk.edu).

Based on 2014/2015 Curriculum

FRESHMAN	HOURS	CREDIT
English 101-102 (see Note 1)		6
Chemistry 120-130 (see Note 1)		8
Biology 150, 160, 159 (see Note 2)		8
Foreign Language - Intermediate Level (see Note 3)		6
Mathematics (see Note 4)		<u>6-8</u>
		34

SOPHOMORE

Chemistry 350, 360, 369		8
Biology 240		4
Biology 220, 229		4
Arts & Humanities (one course from List A)		3
Non-U.S. History		6
Global Challenges (if following 2015 or later catalog)		3
Communication Studies 210 or 240		<u>3</u>
		28-31

JUNIOR

Biochemistry and Cellular and Molecular Biology 230		5
Microbiology 420, 429 (offered spring only)		5
Microbiology 330 (offered fall only)		3
Social Sciences (see Note 5)		6
Arts & Humanities (one course from List A or B)		3
Upper Level Distribution/Connections (see Note 6)		6-9
Communicating through Writing course		<u>0-3</u>
		27-30

TOTAL: 90 semester hours (minimum)

SENIOR

Medical Laboratory Science course of study at UT Medical Center in Knoxville (12 month program)

TOTAL: 120 semester hours (minimum)

Note 1: Or equivalent honors courses.

Note 2: Students who have previously completed Biology 101 and 102 for their lab science requirement may substitute these two courses for Biology 150.

Note 3: This requirement assumes a student has had enough language background in high school to begin the intermediate language sequence at UTK.

Note 4: One of the following math sequences is required for pre-medical laboratory science students: Math 115-125, Math 123-125, Math 141-142, Math 151-152, Math 141-115. Math placement depends on high school courses and grades, ACT scores, and BA/BS requirements.

Note 5: Students must complete a minimum of two courses representing two departments.

Note 6: Students following the 2014 catalog will complete six hours of Upper Level Distribution. Students following the 2015 or later catalog will satisfy the Connections requirement by completing one of the following: a minor, nine hours through a study abroad program, or nine hours from a Connections package.

STUDENTS WITH A BACCALAUREATE (OR HIGHER) DEGREE

A 4+1 option is available to graduates who have a baccalaureate degree in a biological, chemical, or physical science field. The applicant must have completed 16 semester hours of biology (including a microbiology course with a laboratory, immunology, and anatomy/physiology), 16 semester hours of chemistry (including general chemistry and either organic or biochemistry) and 3 semester hours of math at a level of college algebra or higher.

PROGRAM PLANNING

Program planning for the pre-medical laboratory science student is essential. Students should develop their programs carefully in order to present a well-rounded pre-professional program. Admission into the medical laboratory science program is fairly competitive; therefore, students are strongly encouraged to plan an alternative program in the event admission is not achieved. Please note that Classics 273 *Medical Terminology* and Medical Laboratory Science 101 *Introduction to Medical Laboratory Science* are highly recommended as electives. In addition, one year of U.S. history must have been completed in high school or college prior to graduation from the medical laboratory science program.

Pre-health advisors are available in Arts and Sciences Advising Services, 313 Ayres Hall, to help students plan programs with maximum flexibility; however, in the final analysis, it is the student's responsibility to determine the program which will best satisfy his/her needs.

ALPHA EPSILON DELTA (AED)

Alpha Epsilon Delta is a pre-health honor society that seeks to provide information and opportunities for students with an interest in the health professions. The Tennessee Beta Chapter of AED is active at The University of Tennessee. AED activities include information sessions on preparing to apply to professional schools, local speakers from the medical community, trips to Tennessee medical schools and health centers, and service activities. The schedule of meetings is available at <http://web.utk.edu/~aed/>.

Requirements for national membership include three terms of college (at least one at UT), a cumulative GPA of 3.2, a science GPA of 3.2, and participation in AED sponsored events and meetings. Students interested in AED should first affiliate themselves with the organization as a pledge during the first semester at college attendance at UT. Applications for both pledge status and national membership are available in Arts and Sciences Advising Services, 313 Ayres Hall, and at the organizational website.

Students who do not meet the criteria to become national members may continue as a pledge. Pre-health students wishing to receive notification of pre-health activities and AED

events should send an e-mail to mhoskins@utk.edu to request to be added to the pre-health distribution list.

SPECIAL SEMINARS FOR MLS STUDENTS

INPG 100

During each fall semester, Arts and Sciences Advising Services offers a one credit hour course entitled *Introduction to Health Care Delivery*. This one credit hour seminar course is taught in the Wood Auditorium of UT Medical Center. The course provides weekly seminars on topics such as managed care, family practice, ethical issues in medicine, malpractice, allied health programs, and many others. The course is listed in the timetable under Interdisciplinary Programs (INPG) 100 and is open to any interested student.

MLS 101

During the spring and fall semesters, the medical laboratory science program offers a two credit hour course entitled *Introduction to Medical Laboratory Science*. The purpose of this course is to introduce students to the career of a medical laboratory scientist. The course can be found in the timetable under Medical Laboratory Science (MLS) 101 and is open to any interested student.

LETTERS OF EVALUATION

As part of the formal application to the 12-month clinical portion of the Medical Laboratory Science program, students will be asked to provide letters of evaluation from faculty members who have known them as a UT student. Students will find the evaluation form on-line at the program website.

Two evaluations should come from faculty members teaching in science-based disciplines, and one should come from a non-science faculty member. With the approval of the program director, one letter may be from an employer.

Students should make a special effort to become well acquainted with their professors prior to requesting the evaluations.

APPLICATION TO UT MEDICAL CENTER IN KNOXVILLE

Admission to the clinical year is at the discretion of the Admissions Committee of the Medical Laboratory Science Program at the UT Medical Center in Knoxville. Admission to the University of Tennessee, Knoxville, and completion of a pre-medical laboratory science program in the College of Arts and Sciences does not assure admission to the clinical phase of the Medical Laboratory Science Program.

Students must complete all required preparatory coursework with a grade of "C" (not "C-") or higher prior to beginning the MLS program. The average GPA of admitted students is 3.0.

The application deadline for the January class is May 15. An application to the program can be found on the Arts & Sciences Advising Services website as well as on the Medical Laboratory Science website (see contacts next page).

The following application materials need to be completed and returned to LeeAnne Briggs, UT Medical Center, before the application deadline: formal application, \$25 nonrefundable application fee, university transcripts, proposed course outline, and degree audit report (DARS). DARS reports are available on-line at <http://myutk.utk.edu/>.

SELECTION PROCESS

Following the May 15 application deadline, the Admissions Committee reviews all applications, and the program director schedules interviews for all qualified applicants. The Admissions Committee considers the following criteria when reviewing applications and selecting the class:

- Cumulative and science GPA
- Type and difficulty of courses taken
- Courses taken that are not required but are recommended
- Work experience, especially in a healthcare field
- Volunteer and extra-curricular activities in healthcare-related fields
- Letters of recommendation
- Essay
- Interview
- Knowledge of and familiarity with the profession
- Commitment to the profession

Interviews take place in June, and acceptance letters are sent by July 15. Each student accepted into the program must accept or decline the offered position in writing by July 31, accompanied by a nonrefundable \$250 admissions fee to secure his or her position in the program.

Students should send transcript updates each semester until matriculation. Failure to do so will be considered a cancellation of application.

ADDITIONAL INFORMATION IS AVAILABLE FROM:

LeeAnne Briggs, MPH, MLS(ASCP)^{CM},
Program Director, Medical Laboratory Science Program
University of Tennessee Medical Center
1924 Alcoa Highway
Knoxville, TN 37920-6999
(865) 305-9087
(865) 525-5762 (fax)
lbriggs@mc.utmck.edu

http://www.utmedicalcenter.org/health_professionals/educationals_services/medical_technology_program/

Dr. Jeff Becker, Microbiology Department
F339 Walters Life Sciences
University of Tennessee
Knoxville, TN 37996-0845
(865) 974-3006
jbecker@utk.edu

Arts and Sciences Advising Services
313 Ayres Hall
The University of Tennessee
Knoxville, TN 37996-1325
(865) 974-4481
<http://www.artsci.utk.edu/advising/>

American Society of Clinical Pathologists
33 West Monroe, Suite 1600
Chicago, IL 60603-5617
(800) 267-2727
<http://www.ascp.org/>

National Accrediting Agency for Clinical Laboratory Sciences
Suite 720
5600 N. River Road
Rosemont IL 60018
(773) 714-8880
info@naaccls.org

The information in this bulletin is subject to revision. Students are strongly encouraged to consult with a health professions advisor on a regular basis.

THE UNIVERSITY OF TENNESSEE, KNOXVILLE EEO/TITLE IX/SECTION 504 STATEMENT

The University of Tennessee is an EEO/AA/Title VI/Title IX/Section 504/ADA/ADEA institution in the provision of its education and employment programs and services.

Revised June 2014