

# MEDICAL LABORATORY TECHNOLOGY

## Associate of Applied Science degree



### Program and Career Description:

The Medical Laboratory Technician possesses the technical skills necessary to perform routine testing in the areas of hematology, serology, coagulation, clinical microbiology, clinical chemistry, blood banking, and urinalysis in clinical laboratories of hospitals, clinics, and physician offices under the supervision of a physician and/or medical technologist.

The medical laboratory technician has diverse and multi-level functions in the areas of collecting, processing, and analyzing biological specimens and other substances, principles and methodologies, performance of assays, problem solving, troubleshooting techniques, significance of clinical procedures and results, principles and practices of quality assessment, for all major areas practiced in the contemporary clinical laboratory.

### How long is the program?

Columbia State's program is designed with a focus on general education/foundation courses Fall/Spring of the first academic year. A new cohort of students will start the intense sequence of core courses each summer for three semesters (12 months).

### What does the program provide?

A competency based classroom & clinical experience which provides students with the tools for licensure examination success, gainful in-field employment, and career satisfaction including the following:

- classroom and laboratory learning prior to clinical rotations
- practical hands-on experience in a clinical laboratory setting
- clinical competencies which meet/exceed industry expectations
- excellent career mobility for graduates

### How is the job market?

The demand for entry-level MLTs is strong across the region. There is a critical shortage, locally and nationally, which is expected to grow 12 percent from 2016 to 2026, faster than the average for all occupations.

Career	Entry-Level Education	Entry-Level Pay	Median Pay	Experienced Pay
Medical and Clinical Laboratory Technologists	Associate's degree to Bachelor's degree	\$46,100	\$60,270	\$68,920

Career and salary information taken from [JOBS4TN.GOV](http://JOBS4TN.GOV), and Bureau of Labor Statistics, U. S. Department of Labor on the internet at [www.bls.gov](http://www.bls.gov). Check out the [Occupational Outlook Handbook](#) on this website for additional information about similar occupations, education requirements and abilities, and job outlook for these careers. Salaries are not guaranteed.

### Transfer Options

The Medical Laboratory Technology associate of applied science degree is designed for career-entry. However, some universities may accept some or all of the course work for transfer. Transfer credit is awarded at the discretion of the receiving institution. Students are advised to inquire directly with advisors at the university level regarding expectations for transfer.

[www.columbiastate.edu/medlab](http://www.columbiastate.edu/medlab)



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### The Profession

The Medical Laboratory Technician (MLT) is employed in clinical laboratories of hospitals, clinics, physician's offices and other health care facilities performing a variety of laboratory procedures and diagnostic tests. Laboratory tests are performed on body fluids such as blood which is obtained by the technician through venipuncture.

The MLT works as a bench technician under the direct supervision of a physician and/or medical technologist in the areas of blood banking, clinical chemistry, hematology, microbiology, urinalysis, coagulation, and immunology. The MLT is an integral part of the health care team focus on providing optimum patient care. The technician monitors quality control, performs basic scientific principles to laboratory techniques and procedures, recognizes factors that affect procedures and results taking corrective action when indicated, relates laboratory finding to common disease processes, and interacts with other health care personnel and patients.

### Accreditation

The Columbia State MLT Program has applied for accreditation with the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Suite 720, Rosemont, IL 60018-5119, and phone (773)714-8880. The associate degree earned, along with the NAACLS certification of the Columbia State MLT Program, enables the MLT student to qualify for testing with certifying bodies such as the American Society of Clinical Pathologists Board of Registry, thus giving the student the title of MLT (ASCP) and/or with the American Medical Technologist thus giving them an MLT (AMT).

### Certificate to Operate

The Columbia State MLT Program is approved by the Tennessee Medical Laboratory Board in Nashville, Tennessee. The Board is located at: Metro Center Complex, 665 Mainstream Drive, 2nd Floor, Nashville, TN 37243. (615) 532-3202.

Accreditation guidelines concerning program requirements, standards, additional program information, etc., are available in the Medical Laboratory Technology Applicant Handbook located Online at [www.columbiastate.edu/medlab](http://www.columbiastate.edu/medlab).

**Criminal background checks (may include finger printing) and routine drug screens are required by most clinical affiliate sites as a condition of participation in clinical education. Based on the results of the criminal background check, a clinical affiliate may determine to not allow a student's presence at their facility. This could result in the student's inability to successfully complete the requirements of a specific course and the program. More information is available from the program director.**

**Applicants who have been convicted of a crime other than a minor traffic violation may be ineligible for licensure. For more information, contact the MLT Program director.**

### Mission Statement

The Mission of the Columbia State Community College MLT Program is to produce knowledgeable, competent, compassionate, professional Medical Laboratory Technicians.

Fulfillment of the MLT Programs Mission will be based on the following goals and outcomes based on student achievement.

- Goal 1: Students will demonstrate knowledge consistent with the pathology of the field.
- 1.1 Students will recognize a pathology and the corresponding test results.
  - 1.2 Students will communicate tests results to diverse healthcare team members.
  - 1.3 Students will apply knowledge to laboratory skills required in a clinical setting.
- Goal 2: Students will demonstrate competence in the field of Laboratory Medicine.
- 2.1 Students will perform laboratory testing with precision and accuracy.
  - 2.2 Students will perform practice lab competency testing with precision and accuracy.
  - 2.3 Students will comply with safety and governmental regulations.
  - 2.4 Students will possess basic entry-level skills of a Medical Laboratory Technician.
- Goal 3: Students will emulate the professional standards of the laboratory field.
- 3.1 Students will abide by the ASCP Code of Professional Behavior.
  - 3.2 Students will adhere to medical facility guidelines.
  - 3.3 Students will adopt positive working attitudes aligned with facilities mission and goals.
  - 3.4 Students will respond appropriately to healthcare team members with respect.
- Goal 4: Graduates will contribute to the needs of the Medical Laboratory field.
- 4.1 Admitted students will successfully complete the MLT Program.
  - 4.2 Graduates will pass a nationally recognized laboratory exam resulting in certification.
  - 4.3 Graduates will acquire a position as a Medical Laboratory technician.
  - 4.4 Graduates will express satisfaction with the educational experience.
  - 4.5 Employers will express satisfaction with graduates as entry-level MLT's.

The MLT program mission and goals is consistent with the mission and goals of the college. Achievement of the goals is measured by the Outcomes Assessment plan completed annually.

### Admission Requirements

1. Meet all college general requirements for admission as a degree-seeking student (as stated in the catalog) and be admitted to the college.
2. See "Programs with Special Admissions Requirements," in the college catalog.
3. Complete all required Learning Support courses by the end of the fall semester prior to the year in which admission is sought.

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4. Have earned a cumulative grade point average (GPA) of 2.5 or above on a 4.0 scale for academic subjects. The high school GPA is used for students who have earned less than 12 college credit hours. An applicant who has not earned 12 credit hours of college level credit that has no high school GPA must have an average standard score of at least 450 on the GED® or 45 on the HiSET®.
  5. A general orientation will be held in the Introduction to Medical Laboratory course offered each January. This offers ample time to acquaint the student with the program and offers a chance for the student to have their questions answered. Another orientation session will be held in May for the class that is selected to the program.
  6. All program application requirements must be completed before February 1. This includes the review of the MLT Applicant Handbook.
  7. Before beginning the MLT program, all students are expected to have the following abilities upon which the program can build:
    1. Vision: Able to read and interpret charts, graphs, and labels; read and interpret instrument panels and printouts; discriminate colors, hue, shading or intensity and clarity; read microscopic material and record results.
    2. Speech and Hearing: Able to communicate effectively and sensitively in order to assess non-verbal communication; adequately and accurately transmit information; follow verbal or written communication; have clarity of speech especially if English is not one's first language.
    3. Motor Functions: Possess all skills necessary to carry out diagnostic procedures; manipulate tools, instruments and equipment, perform phlebotomy safely and accurately; travel to a clinical site for clinical experience.
    4. Behavioral Requirements: Possess the emotional health required for full utilization of applicant's intellectual abilities; be able to recognize emergency and take appropriate action.
    5. Physical Requirements: Able to complete fine repetitive hand movements; twist and bend; handle flammable and infectious materials; handle hazardous chemicals and electrical equipment; lift ten (10) pounds; maintain prolonged sitting or standing positions; maintain concentration with distracting noises and close proximity to fellow workers; tolerate unpleasant odors; work in buildings either above or below ground level; work in an environment without windows; perform keyboarding.
    6. Critical Thinking: Able to appropriately and accurately perform complex interpretative testing.
    7. Professionalism: Able to maintain a professional attitude and appearance as described in the MLT Student Manual.
  8. In compliance with the American with Disabilities Act, students are encouraged to register with the office of Counseling/Disability Services for possible assistance with accommodations. It is the student's responsibility to voluntarily and confidentially provide appropriate documentation regarding the nature and extent of a disability. Students requesting accommodation are (strongly) encouraged to contact the office of Counseling/Disability Services at the beginning of the semester. Students may contact the director of counseling at 931.540.2857.
  9. College credit for BIOL 2010 (A&P I), BIOL 2020 (A&P II), BIOL 2230 (Microbiology), and MATH 1530 (Statistics) must be within 5 years of starting the program with a minimum grade of "C" or higher. A student enrolled in one or more of these courses concurrent with MLAB 1301 (Intro to Med Lab) during the Spring semester when the program application is submitted may be offered program admission contingent upon completion of course(s) with a grade of "C" or higher.
- Completion of all items listed above denotes eligibility for consideration into the MLT Program but in no way implies or guarantees admission to the program.
- Once admitted, students are required to submit documentation of the following entry requirements prior to the first day of clinical assignment. If the documentation is not completed prior to the first day of clinical assignment, students will not be permitted to go to clinical.
- a. Health Requirements: All MLT students must submit evidence of good health by returning a completed Physical Examination form. Forms are given to the student upon acceptance into the program. All students must have a:
    1. Documented negative TB skin test and/or chest x-ray yearly. TB skin tests must be within three months of the start of the program.
    2. Evidence of Immunity for:
      - a. Rubella (positive titer).
      - b. Varicella zoster (chicken pox) (positive titer).
      - c. Rubeola titer (positive titer).
      - d. Tetanus/diphtheria/pertussis booster within the past ten years.
      - e. Hepatitis B
      - f. Seasonal current Influenza immunization
  - b. CPR (Cardiopulmonary Resuscitation) Requirements: All admitted students must submit evidence of current BLS (Basic Life Support) Provider certification compliant with American Heart Association (AHA) standards. Inclusion of two-person CPR and AED (Automatic Electronic Defibrillator) use is required. In order to meet clinical affiliate expectations, AHA HeartCode® (blended learning) nor HeartSaver® are accepted. BLS classes are available through numerous providers and are periodically offered by Columbia State through the Economic & Workforce Development (EWD) office. Certification must be maintained continuously for the duration of enrollment.

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- c. Malpractice insurance is required for all medical laboratory clinical practicum courses. A group policy is available. The fee is assessed annually as a part of the registration fees.
- d. Health insurance is required. Students must provide evidence of health insurance coverage before clinical assignments may begin.
- e. Criminal background checks and routine drug screens are required at most affiliated clinical training sites as a condition of participation in clinical education. Based on the results of these tests, an affiliated clinical site may determine to not allow your presence at their facility. This could result in the inability to successfully complete the requirements of a specific course and the program. More information is available from the program director.
- f. Students are required to provide results of a titer documenting levels of immunity to program or institutional officials.

### Admissions Procedures

1. Submit the following to the Admissions office.
  - a. Completed Application for Admission to the College.
  - b. Official college transcripts from all colleges previously attended.
  - c. High school transcripts or High School Equivalency Diploma - HSE (GED® or HiSET®).
  - d. ACT or SAT exam results.
2. Register for the Introduction to Medical Laboratory course.
3. Submit completed MLT program application forms to the MLT Program Director by February 1.
4. If an applicant does not meet the admission criteria, he /she will be notified in writing. If the applicant wishes to complete his/her file and application to establish eligibility for consideration the following year, remaining requirements must be submitted and the program director must be notified of the intent in writing.

### Continuation/Retention Requirements

In order to continue in the MLT Program, students must meet the following academic requirements:

1. Earn a "C" or higher in each MLAB course and each required math and science course.
2. Maintain a minimum GPA of 2.0 after admission and prior to enrollment as well as during each term of enrollment in the program.
3. Maintain professional conduct as outlined in the MLT Student Policy Manual.
4. Enroll in all required general education courses during (or before) the semester listed in the curriculum outline.
5. Submit annual TB skin test results to the Health Sciences Records Clerk's office in the William R. Walter Bldg. on the Columbia campus.
6. Maintain evidence of uninterrupted medical insurance coverage in designated program/institutional offices.

### Academic Advising

Although educational decisions are ultimately the student's responsibility, it is important that every student receive academic advising to ensure the best possible choices are made. All Faculty advisors are available to students for consultation and maintain regular office hours for this purpose. Students will be assigned advisors by mid-term of their first semester of study.

Students may print a Degree Audit Evaluation by accessing their MyChargerNet account. These printouts will indicate the courses remaining toward particular degrees or certificates.

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## Program Requirements

Students may be required to take additional Learning Support courses.

Communications Requirement  
COMM 2025  
ENGL 1010 or ENGL 1020

Humanities/Fine Arts (Take 1 course)  
ART 1035, 2000, 2020  
ENGL 2055, 2130, 2160, 2235, 2310, 2320, 2860  
HUM 1010, 1020  
MUS 1030  
PHIL 1030, 1040, 2200  
THEA 1030

Natural Science Requirement  
BIOL 2010, BIOL 2020, BIOL 2230\*

Mathematics Requirement  
MATH 1530\*

Social/Behavioral Sciences  
PSYC 1030

\*Biology and math courses must have been completed no more than five years prior to start of the program.

Major Required Courses  
ADMN 1306  
COLS 101  
MLAB 1301, 1310, 1320, 2130, 2201, 2202, 2301, 2310, 2401, 2402, 2403, 2420

### Requirements for Graduation include:

- Earn 25% of total program credits in residence at Columbia State.
- Earn a GPA of at least 2.0 in program courses.
- Earn a cumulative GPA of 2.0 or higher.
- Take the Exit Exam required by Columbia State.

If you have completed TN eCampus courses, run a degree audit from the student tab in myChargerNet to determine how these courses apply to this program.

## Sample Academic Plan

### First Year - Fall Semester

___ ENGL 1010	English Composition I <b>or</b>	
___ ENGL 1020	English Composition II	3
___ BIOL 2010	Human Anatomy & Physiology I	4
___ MATH 1530	Introductory Statistics	3
___ ADMN 1306	Medical Terminology	3
___ COLS 101	Columbia State College Success	1
		<b>14</b>

### First Year - Spring Semester

___ BIOL 2020	Human Anatomy & Physiology II	4
___ Humanities/Fine Arts Requirement		3
___ BIOL 2230	Microbiology	4
___ MLAB 1301	Intro to Medical Laboratory	3
		<b>14</b>

### First Year - Summer Semester

___ MLAB 2402	Hematology	4
___ MLAB 2403	Clinical Microbiology	4
___ MLAB 2202	Urinalysis/Body Fluids	2
___ MLAB 2201	Clinical Immunology	2
		<b>12</b>

### Second Year - Fall Semester

___ MLAB 2301	Blood Bank	3
___ MLAB 1310	Practicum I	3
___ MLAB 1320	Practicum II	3
___ COMM 2025	Fundamentals of Communication	3
		<b>12</b>

### Second Year - Spring Semester

___ MLAB 2310	Practicum III	3
___ MLAB 2420	Practicum IV	4
___ MLAB 2130	Seminar I	1
___ MLAB 2401	Clinical Chemistry	4
___ PSYC 1030	Introduction to Psychology	3
		<b>15</b>

**TOTAL CREDIT HOURS 67**

**For more information contact:**  
**Mike Baker, M.Ed. (ASCP) at**  
**mbaker31@columbiastate.edu or 931.540.2706**  
**or**  
**Health Sciences Division office at**  
**931.540.2599 or 931.540.2600**

Columbia State Community College, a Tennessee Board of Regents institution, is an equal opportunity, affirmative action educational institution.  
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