



## Medical Laboratory Technology

**Program:** Medical Laboratory Technology

**Program Code:**

MLT

**Academic Area:**

Health Sciences

**Type:**

Associate in Science

**CIP Code:**

51.1004

### Program Statement

Students completing the Medical Laboratory Technology (MLT) program curriculum are prepared to work in a modern clinical laboratory performing a wide range of laboratory procedures used in the detection, diagnosis, and treatment of disease and health maintenance. They develop academic and technical competence in the major areas of clinical laboratory practice including urinalysis, immunology, hematology, clinical chemistry, medical microbiology, immunoematology, and phlebotomy.

### Program Information

- Students develop academic knowledge, clinical skills, and professional behavior through classroom, laboratory, and clinical experiences.
- Medical Laboratory Technology program courses (MED) are offered during the day.
- Phlebotomy is a required component which is explained during the Health Science Information Session.
- Once enrolled, students are required to complete all courses in the required sequence below in order to integrate theoretical and clinical education.
- Students may substitute both BIO 233: Human Anatomy and Physiology I and BIO 234: Human Anatomy and Physiology II for BIO 154: Human Physiology.
- Successful applicants have already completed math through high school algebra II, and high school level biology, and chemistry.
- Biology and chemistry courses may be taken at Bristol before admission to the program.
- Technological literacy is also important.
- Students are advised to complete required general education courses prior to admission into the MLT program, such as:
  - PSY 101: General Psychology
  - ENG 101: Composition I: College Writing
  - ENG 102: Composition II: Writing about Literature
  - MTH 119: Fundamental Statistics
  - Human Expression elective

### Program Learning Outcomes

Students will be able to:



1. Recognize and demonstrate proper collection and processing of biological specimens and other substances. (Pre-Analytical)
2. Properly execute the venipuncture procedure for blood specimen procurement. (Pre-Analytical)
3. Define and implement proper pre-analytical process components including patient and specimen identification requirements. (Pre-Analytical)
4. Define and describe the principles and methodologies of clinical laboratory procedures. (Analytical)
5. Perform laboratory assays within appropriate guidelines and recognize problems within the assay process and be able to differentiate when troubleshooting is required. (Analytical)
6. Prepared to interpret and evaluate a variety of clinical procedures and results and describe the clinical significance. (Analytical)
7. Identify and implement the principles and practices of quality assessment. (Analytical)

## Program Benchmarks

### 2023 ASCP Certification Rates

	7/1/19- 6/ 30/2020	7/1/20- 6/ 30/2021	7/1/2021-6/ 30/2022	7/1/2022-6/ 30/2023
<b>Certification Exam Pass Rates</b>				
A) Total # of Graduates	6	10	7	9
B) # who sat for the exam within first year of graduation	5	6	4	8
C) # who passed the exam within first year of graduation	4	5	3	5
Yearly Certification Pass Rate: (C/B)	88%	83%	75%	62%
Three-Year Average Pass Rate (Total across "C"/ Total Across "B")				73%
<b>Graduation/Attrition Rates</b>				
A) # who began the "final half" of the program	6	10	7	9
B) # who began the "final half" of the program but subsequently left (voluntarily or involuntarily)	0	0		0
C) # who began the "final half" of the program but are still currently enrolled	0	1		0
D) # who began the "final half" of the program during the given time period and have since graduated	6	9	7	9
Yearly Attrition Rate: (B/A)	0	0	0	0
Yearly Graduation Rate: (D/A-C)	100%	100%	100%	100%
Three-Year Average Graduation Rate: {total "D"/(total "A" - total "C")}				100%
<b>Placement Rates</b>				
A) Total # of Graduates	6	10	7	9
B) # that found employment (in the field or in a closely related field) and/or continued their education within one year of graduation	6	10	7	9
C) # that did neither listed above?	0	0	0	0
D) # that you do NOT have any information for	0	0	0	0
Yearly Average Placement Rate: (B)/(B+C)	100%	100%	100%	100%
Three-Year Average Placement Rate: {Total "B"/ (Total "B"+ Total "C")}				100%

## Program Accreditation

The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 North River Road, Suite 720, Rosemont, IL 60018. Telephone 773-714-8800.

Graduates are eligible to take the national certification examination offered by the American Society of Clinical Pathology Board of Certification (ASCP-BOC). The granting of the degree is not contingent upon passing an external certification or licensure examination.



## After Bristol Community College

- Many medical laboratory technicians work in hospital laboratories. Career opportunities are also available in physician's offices, HMOs, biotechnology, veterinary clinics, and reference, industrial, environmental, and military laboratories.
- The MLT degree provides a foundation that allows graduates to pursue medical education, sales, and computer careers. Many graduates pursue advanced degrees in Medical Laboratory Science and other medical fields.
- Bristol participates in the statewide MassTransfer program and has developed many program-to-program transfer articulation agreements which guarantee admission and credit transfer. For a complete listing of eligible MassTransfer programs, current Bristol articulation agreements, and to complete an A2B Program Search, visit the Transfer Services website to review which credits will be transferred and applied to your degree.

## Infused General Education Competencies

Ethical Dimensions, First-Year Experience, Multicultural Perspective, Oral Communication, Technical Literacy

## Admission Process

The Medical Laboratory Technology program is a competitive program with selective admission requirements. A limited number of students are admitted each year. Priority is given to applications submitted by the Priority Application deadline, which is February 1.

The Admissions Office reviews each applicant based on the pre-admission requirements. Meeting minimum criteria places the applicant in the selection pool but does not guarantee admission to the Medical Laboratory Technology program. Applicants in the selection pool are ranked according to GPA (highest to lowest) on the pre-admission courses. The Admissions Office notifies the top candidates of acceptance into the program, and these candidates have until May 1st to confirm their acceptance.

## Admission Requirements

All applicants are required to complete the following pre-admission requirements to be considered for the selection pool for the Medical Laboratory Technology Program:

1. Earn a "C" or higher in the following pre-admission courses:
  - High School Algebra II, demonstrated Intermediate Algebra II Competency, or college Algebra (Introductory Algebra excluded)
  - Chemistry with laboratory (high school or college)
  - Biology with laboratory (high school or college)

NOTE: Applicants must have a minimum grade point average (GPA) of 2.7+ in the above pre-admission courses, and students must complete all pre-admission biology and chemistry courses within 7 years of the priority application deadline.



2. Applicants applying directly from high school must demonstrate a cumulative GPA of 2.7 or higher. Applicants having earned a state-approved high school equivalency credential may alternatively meet these pre-admission criteria by earning a minimum GPA of 2.7 in the aforementioned pre-admission courses.

3. Attend one mandatory Health Science Information Session. Applicants are advised to preregister early as seating is limited.

Transcripts from attendance at other regionally accredited colleges and universities may be required with submission of your application. Please refer to the Admissions page within this catalog for further information. Failure to comply with these requirements may result in your application not being reviewed for the program to which you applied.

## Grade Requirements

A minimum of "C" is required in the following courses:

- BIO 154: Human Physiology
- BIO 239: Elements of Microbiology
- CHM 115: Health Science Chemistry I
- CHM 116: Health Science Chemistry II, and
- MTH 119: Fundamental Statistics.

This requirement provides the necessary foundation for MED courses. Students must pass all components of the MED courses (lecture and laboratory on campus and clinical practicum at the affiliate agency) with a minimum grade of "C." Students who do not achieve the minimum grade of "C" in the on campus lecture and laboratory components will not be allowed to progress to the clinical practicum.

Students who fail to attain a grade of "C" in each of the MED course components (lecture and laboratory on campus and clinical practicum at the affiliate agency) will receive a course grade no higher than a "D."

A student who fails to attain a minimum grade of "C" in the clinical practicum will receive a course grade no higher than a "D".

A student who is dismissed from the clinical practicum or receives an unsatisfactory clinical grade due to unprofessional behavior will receive a course grade no higher than a "D".

A student who receives an unsatisfactory clinical grade due to negligent or unsafe practice will receive a final course grade of "F".

Failure to achieve the required grade in MED courses may result in dismissal from the program.

Students are eligible to reapply to the program one time only through the Admissions Office.

## Additional Requirements

Accepted applicants must comply with the Bristol Community College's health services requirements. This includes an physical examination, tetanus and tDap, measles, mumps, rubella, hepatitis B, and varicella (chicken pox) immunizations or titres results (blood test to prove immune status). Covid-19 vaccination and booster are required. If under the age of 21 you must also be tested for meningitis as of Fall 2018. TB testing is required each year. Students must carry personal health insurance, professional liability insurance, and have current CPR certification by

the American Heart Association, Basic Life Support for Healthcare Providers or the American Red Cross CPR/AED for Professional Rescuers and Healthcare Providers. Certification must be active through your last semester at Bristol Community College.

Upon admission to the CLS Program, all students must undergo a Criminal Offender Record Information (CORI) check, a Sex Offender Registry Information (SORI) check, and a drug screen performed by a facility under contract with Bristol Community College. The fee for all screening is paid by the student. A positive CORI, SORI and/or drug screen may prevent students from working in contracted health facilities, which will prevent students from completing the program objectives. These checks are required due to potential unsupervised contact with children, the disabled, or the elderly during a clinical experience. Students found to have certain criminal convictions or pending criminal actions will be presumed ineligible for clinical placement. The College is authorized by the Commonwealth's Department of Criminal Justice to access CORI records. Sex Offender checks shall be performed pursuant to Massachusetts General Laws, Chapter 6, Sections 178C-178P.

For more information regarding the College's CORI/SORI check process, please contact the Human Resource Department at (774) 357-3142.

Please be advised that although Massachusetts law permits the use of medical marijuana and the possession, use, distribution and cultivation of marijuana in limited amounts, any possession, use, distribution or cultivation of marijuana remains prohibited under College policy pursuant to federal law. Further, any student who tests positive for marijuana will be ineligible for clinical placement. Please refer to the College's Student Handbook for the College's complete Marijuana Policy.

## **Additional Costs**

Students accepted into the program are responsible for associated costs such as uniforms, books, name tags, safety supplies, transportation to and from clinical assignments, drug screen and certification exam application fees.

## **Clinical Affiliations**

Placement in a clinical practicum is a full-time commitment and students should limit outside work obligations.

Transportation to clinical practicum sites is the responsibility of the students. Students should be prepared to travel an hour or more from campus. The availability of clinical practicums depends on the area healthcare providers' ability to accept students.

In some cases, practicums may be completed beyond the semester schedule. All related practicums must be completed within six months of completing the lecture/laboratory component of MED course. Students who exceed this time limit must demonstrate that they have maintained competency prior to placement.

## **Essential Functions**

The Medical Laboratory Technology program essential functions include certain cognitive, physical and behavioral abilities which are necessary to perform the duties of a professional Clinical Laboratory Technician.

To meet program and course learning outcomes, students must possess the following basic abilities:



- Cognitive ability sufficient to learn and use the body of knowledge necessary to meet the program curriculum requirements and attain career entry status in the profession.
- Physical ability, sufficient mobility, and motor coordination to safely collect and process patient specimens and perform laboratory testing procedures using a microscope, computer and various types of diagnostic instruments.
- Visual acuity sufficient to read and interpret test procedures, physician orders and test results, monitor instrument function, focus a microscope and differentiate colors.
- Hearing ability sufficient to respond to messages and requests from instructors, patients, physicians, and staff and to respond to equipment signals.
- Communication skills sufficient to allow for communication with instructors, staff, patients and physicians.
- Emotional stability sufficient to interact professionally with instructors, staff, patients, and physicians; respect patient confidentiality; use reasonable judgment; and accept responsibility for their actions.

## Degree Requirements

### General Courses

Course #	Title	Credits
BIO 154	Human Physiology	4
BIO 239	Elements of Microbiology	4
CHM 115	Health Science Chemistry I	4
CHM 116	Health Science Chemistry II	4
ENG 101	Composition I: College Writing	3
ENG 102	Composition II: Writing about Literature	3
MTH 119	Fundamental Statistics	3
PSY 101	General Psychology	3

### Elective Courses

Course #	Title	Credits
	Human Expression Elective	3

### Program Courses

Course #	Title	Credits
MED 101	Introduction to Clinical Laboratory Science	3
MED 102	Urinalysis	3
MED 200	Hematology	5
MED 205	Immunology - Serology	4
MED 206	Medical Microbiology	6
MED 215	Immunoematology	5
MED 216	Medical Microbiology II	4
MED 217	Clinical Biochemistry	6
PLB 102	Principles and Methods of Phlebotomy	4



## Required Course Sequence - Fall Semester 1

Course #	Title	Credits
MED 101	Introduction to Clinical Laboratory Science	3
CHM 115	Health Science Chemistry I	4
BIO 154	Human Physiology	4
MTH 119	Fundamental Statistics	3
ENG 101	Composition I: College Writing	3
	Human Expression Elective	3

## Required Course Sequence - Spring Semester 2

Course #	Title	Credits
MED 102	Urinalysis	3
CHM 116	Health Science Chemistry II	4
BIO 239	Elements of Microbiology	4
ENG 102	Composition II: Writing about Literature	3
PLB 102	Principles and Methods of Phlebotomy	4

## Required Course Sequence - Summer Semester

Course #	Title	Credits
PSY 101	General Psychology	3

## Required Course Sequence - Fall Semester 3

Course #	Title	Credits
MED 200	Hematology	5
MED 205	Immunology - Serology	4
MED 206	Medical Microbiology	6

## Required Course Sequence - Spring Semester 4

Course #	Title	Credits
MED 215	Immunohematology	5
MED 216	Medical Microbiology II	4
MED 217	Clinical Biochemistry	6
	<b>Total credits:</b>	<b>71</b>



## Category Descriptions

### Human Expression Elective

Credits: 3

Choose one Human Expression elective which also meets the Humanities and Fine Arts MassTransfer requirements.