



MIDDLESEX COMMUNITY COLLEGE

33 Kearney Square

Lowell, MA 01852

**MEDICAL LABORATORY TECHNOLOGY**

**STUDENT HANDBOOK**

**2018 – 2019**

Revised: August 2018





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## INTRODUCTION

Welcome to the Medical Laboratory Technology Program (MLT) at Middlesex Community College. The faculty of MCC wish you success in the pursue of your educational goals. The MLT program follows the mission statement of the college. Middlesex Community College provides access to affordable education for a diverse community from all ethnic backgrounds and identities, preparing individuals for success and lifelong learning. We promote academic excellence, provide workforce development opportunities, and empower all learners to become productive and socially responsible members of our local and global communities. As much as possible, we will be here to help you through your academic endeavors. We will assist you in gaining an education in the classroom, both didactically and in laboratory skills, and guide you in the application of this knowledge in your clinical practicum experiences.

Middlesex Community College is accredited by the New England Association of Schools and Colleges (NEASC). The Medical Laboratory Technology Program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Accreditation by NAACLS assures students that they will be provided with a quality education in laboratory medicine. Upon successful completion of the Associate Degree in Medical Laboratory Technology, the graduate is eligible to sit for the American Society for Clinical Pathology (ASCP) national certification exam. Graduation from the program is not contingent upon passing an external certification exam.

The Middlesex Community College MLT Student Handbook has been compiled by the faculty to provide information pertinent to students enrolled in this program. The purpose of this handbook is to detail policies and procedures specific to this program. This handbook is to be used as a supplement to the Middlesex Community College Student Handbook which is accessible on the college website. The policies and procedures set forth in this handbook are designed to support the success of the student.



## **CHAPTER 1**

# **MEDICAL LABORATORY TECHNOLOGY PROGRAM INFORMATION**



## Program and College Leadership

### **Medical Laboratory Technology Program Coordinator**

Suzanne E. McHale MS MT(ASCP)/ Professor

978-322-8412

[mchales@middlesex.mass.edu](mailto:mchales@middlesex.mass.edu)

### **Dean of Nursing and Allied Health**

Katherine Gehly MSN, RN, CNE

978-656-3047

[gehlyk@middlesex.mass.edu](mailto:gehlyk@middlesex.mass.edu)

### **Dean of Students**

Pamela Flaherty

781-280-3631

[flahertyp@middlesex.mass.edu](mailto:flahertyp@middlesex.mass.edu)

### **Provost and Vice President of Academic and Student Affairs**

Philip J. Sisson

781-280-3571

[sissonp@middlesex.mass.edu](mailto:sissonp@middlesex.mass.edu)

### **President**

James Mabry, PhD.

978-656-3100

[mabryj@middlesex.mass.edu](mailto:mabryj@middlesex.mass.edu)



## Middlesex Community College MLT Faculty

Suzanne McHale MS, MT (ASCP)  
Professor, Program Coordinator  
978-322-8412  
[mchales@middlesex.mass.edu](mailto:mchales@middlesex.mass.edu)

Christine Laviolette BS, MT (ASCP)  
Assistant Professor  
[laviolettec@middlesex.mass.edu](mailto:laviolettec@middlesex.mass.edu)

Allison Hart BS, MLS (ASCP)  
Part-Time Faculty  
[harta@middlesex.mass.edu](mailto:harta@middlesex.mass.edu)





## **MIDDLESEX COMMUNITY COLLEGE MISSION STATEMENT**

In summer 2016, Middlesex Community College adopted a new mission, vision and values, as follows:

### **Mission:**

Middlesex Community College provides access to affordable education for a diverse community from all ethnic backgrounds and identities, preparing individuals for success and lifelong learning. We promote academic excellence, provide workforce development opportunities, and empower all learners to become productive and socially responsible members of our local and global communities.

### **Vision:**

Middlesex Community College is committed to academic excellence and transforming lives through educational and career opportunities for all members of our community. We will inspire and prepare individuals to successfully meet the challenges of a rapidly changing world.

### **Values:**

**Excellence** - Providing outstanding programs that promote academic, personal, and professional success within an environment of integrity and civility.

**Affordability and Accessibility** - Promoting policies that welcome participation in higher education by offering cost-effective pathways toward academic success.

**Diversity and Equity** - Advocating for equality of access and opportunity, fostering appreciation of our diverse communities, and securing resources to support multicultural and global education for students, staff, and faculty.

**Workforce Development** - Responding to our communities by offering degree and certificate programs that create pathways for multiple career options, professional development, and transfer to four year colleges/universities.

**Integrity and Respect** - Promoting transparency and a spirit of trust in all areas of the college through open and civil communication, knowledge sharing, and active listening.

**Innovation** - Recognizing and supporting the development of teaching and learning strategies that encourage creativity, scholarship, and discovery.

**Inclusive Learning and Support** - Creating an atmosphere supportive of multiple needs and a culture of lifelong learning that foster professional and personal growth for students, staff, and faculty.

**Wellness** - Promoting student and employee well-being and satisfaction through comprehensive, collaborative, and sustained integration of community and personal wellness practices.



**Flexibility** - Embracing change that preserves our core mission, respects institutional traditions, improves learning outcomes, and stimulates progress, growth and vitality.

The goals of MCC's strategic plan align with the goals of the Vision Project as articulated by the Massachusetts Department of Higher Education. The Medical Laboratory Technology Associate Degree program mission is aligned with the college's mission statement and the expectations of the Massachusetts Department of Higher Education with student retention, completion and workforce alignment.

### **MEDICAL LABORATORY TECHNOLOGY PROGRAM MISSION STATEMENT**

The mission of the Medical Laboratory Technology Program at Middlesex Community College is to prepare, inspire and motivate a diverse community of learners to enter the field of laboratory medicine with the tools and knowledge necessary to contribute positively to health care. The program will graduate students who are competent, entry level medical laboratory technicians capable of performing routine clinical laboratory testing in all major areas of the laboratory. In keeping with the Mission of Middlesex Community College, we encourage our students to develop strong critical thinking skills, lay the foundation for a lifetime of learning, and instill the importance of becoming a vital part of their community.

### **PROGRAM OUTCOMES**

Graduates of the Medical Laboratory Technology program will:

- Demonstrate the entry level competencies necessary to perform routine clinical laboratory tests in all areas of the laboratory.
- Assume responsibility for information processing, training, and quality control monitoring wherever clinical laboratory testing is performed.
- Apply safety and governmental regulations to maintain compliance in the laboratory.
- Employ effective communication skills with colleagues and other health care professionals.
- Maintain patient confidentiality and perform duties within the constraints of legal, moral, and ethical conduct.
- Demonstrate accountability and responsibility for personal growth and professional development.



## **PROGRAM GOALS**

- Students will be able to perform routine laboratory procedures encompassing all major areas of the clinical laboratory including hematology, chemistry, immunology, serology, microbiology, urinalysis and transfusion services at the career entry level.
- Students will be able to procure laboratory test samples in an efficient and timely manner.
- Students will be able to recognize unexpected results and instrument malfunctions and take appropriate action.
- Students will be able to produce accurate laboratory test results within acceptable limits of quality control.
- Students will be able to correlate laboratory findings to common disease processes.
- Students will demonstrate critical thinking and problem-solving skills.
- Students will be able to communicate effectively and understand the need to consult with more experienced team members when necessary and to deliver test information to clinicians in a timely manner.
- Students will comply with safety procedures and ethical standards of practice.
- Students will be accountable and professional when interacting with patients, fellow employees, and other health care providers and the public.
- Students will understand the importance of continuing education and professional awareness.
- Students will be prepared to sit for the Board of Certification exam for Medical Laboratory Technician offered by the American Society of Clinical Pathology (ASCP).
- Students will pass the certification exam as a first time applicant at an 80% pass rate.
- Students will find employment in their field at an 80% employment rate, post-graduation, of those seeking employment.

**\*\* Granting of the Associate of Science degree in Medical Laboratory Technology is not contingent upon passing any external certification or licensure examination.**



## **PROGRAM ACCREDITATION**

The National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) is committed to being the premier international agency for accreditation and approval of educational programs in the clinical laboratory sciences and related health professions through the involvement of expert volunteers and its dedication to public service.

Primary aspects of the NAACLS programmatic accreditation process are: (1) the self-study process; (2) the site visit process; (3) evaluation by a review committee, (4) assessment of review committee evaluation by the Quality Assurance Committee, and (5) evaluation by the Board of Directors. Evaluation is based on Standards, which are the minimum criteria used when determining programmatic accreditation.

NAACLS conducts various functions of programmatic accreditation including: (1) drafting and reviewing Standards for the operation of specialized programs; (2) selecting and training knowledgeable volunteers to review Self-Study Reports and serve as site visitors; (3) selecting representatives to serve on the review committees and the Board of Directors, and (4) granting accreditation awards based on a program's self-study and site visit processes.

Accreditation is a process of external peer review in which an agency grants public recognition to a program of study or an institution that meets established qualifications and educational standards. Programs that participate in the NAACLS programmatic accreditation process typically culminate in an associate's degree or higher upon completion. Participation in the accreditation process is voluntary since there is no legal requirement for specialized programs and institutions to participate. However, there are factors that make accreditation valuable. The benefits include, but are not limited to, the following.

NAACLS Accreditation:

1. Through a review process that includes a Self-Study Review and Site Visit, identifies for the public specialized degree and certificate programs that meet nationally established standards of educational quality.
2. Stimulates improvement of educational programs by involving faculty and staff in ongoing self-evaluation, research and planning.
3. Promotes a better understanding of the goals of professional education.
4. Provides reasonable assurance that practitioners meet minimum educational standards upon entry into the profession.
5. Assists specialized programs in achieving their objectives.

The accreditation standards for Medical Laboratory Technician (MLT) programs may be found using the following link:

<http://www.naacls.org/docs/standards2012.pdf>

National Accrediting Agency for Clinical Laboratory Sciences  
5600 N River Road  
Suite 720  
Rosemont, IL 60018  
773-714-8880



## CHAPTER 2

### GENERAL STUDENT INFORMATION



## **ACADEMIC CALENDAR 2018 – 2019**

### **Fall 2018**

Professional Day/Student Orientation August 29, 2018

Professional Day/Student Orientation August 30, 2018

Labor Day- No Day or Evening Classes September 3, 2018

Fall 2018- Classes Begin Tuesday/Thursday Day & Evening, Tuesday Day & Evening September 4, 2018

Fall 2018- Minimester 1 Classes Begin Tuesday/Thursday September 4, 2018

Fall 2018- Classes Begin Monday/Wednesday, Monday/Wednesday/Friday, Wednesday Day, Monday/Wednesday and Wednesday Evening September 5, 2018

Fall 2018- Classes Begin Minimester 1 (160 minute meetings) September 5, 2018

Fall 2018 - Classes Begin Thursday Evening September 6, 2018

Fall 2018 - Classes Begin Friday Day \* September 7, 2018

Fall 2018 - Classes Begin Saturday Day \* September 8, 2018

Fall 2018 - Classes Begin Monday Day \* September 10, 2018

Fall 2018 - Classes Begin Monday Evening \*\* September 10, 2018

Columbus Day - No Day or Evening Classes October 8, 2018

Fall 2018- Minimester 1 Last Day to Withdraw October 12, 2018

Professional Day - No Day Classes, Evening Classes Meet October 23, 2018

Fall 2018 - Minimester 1 Monday/Wednesday Classes End with 120 minute final exam October 24, 2018

Fall 2018 - Minimester 1 - Tuesday/Thursday Classes End with 120 minute final exam October 25, 2018

Fall 2018 - Minimester 2 - Monday/Wednesday Classes Begin October 29, 2018

Fall 2018 - Minimester 2 - Tuesday/Thursday Classes Begin October 30, 2018

Veteran's Day (Observed) - No Day or Evening Classes November 12, 2018

Thanksgiving Break - Day Classes Meet, No Evening Classes - Campus Closes at 5:00 PM November 21, 2018

Thanksgiving Day - No Classes November 22, 2018

Thanksgiving Break - No Classes November 23, 2018



Thanksgiving Break - No Classes November 24, 2018

Fall 2018- Last Day to Withdraw from Full Semester November 26, 2018

Fall 2018 - Wednesday Only Day classes end. Finals 12/18 - 12/21. December 5, 2018

Fall 2018- Minimester 2 Last Day to Withdraw December 7, 2018

Fall 2018 - See Fall Final Exam Schedule at <https://www.middlesex.mass.edu/finalexams/>  
December 10, 2018

Fall 2018 - Tuesday only Day Classes End (Finals Exam Dec 18- 21) December 11, 2018

Fall 2018 - Tuesday Evening Classes End with 120 minute final exam December 11, 2018

Fall 2018 - Tuesday/Thursday Day & Thursday only Day End (Final Exam Dec 18-21) December 13, 2018

Fall 2018 - Tuesday/Thursday Evening Classes End with 120 minute final exam December 13, 2018

Fall 2018- Minimester 2 Tuesday/Thursday Classes End (Final Exam Dec 18-21) December 13, 2018

Fall 2018 - Friday only Day Classes End with 120 minute final exam December 14, 2018

Fall 2018 - Monday/Wednesday/Friday Classes End (Final Exam Dec 18-21) December 14, 2018

Fall 2018 - Saturday only Classes End with 120 minute final exam December 15, 2018

Fall 2018 - Monday/Wednesday Day Classes End ( Final Exam Dec 18-21) December 17, 2018

Fall 2018- Minimester 2 Monday/Wednesday Classes End with a 120 minute final exam  
December 17, 2018

Fall 2018 - Monday only Day, Monday/Wednesday & Monday Evening Classes End with 120 minute final exam December 17, 2018

Fall 2018 - Final Exams (Dec. 18-Dec. 21) for Monday/Wednesday, Monday/Wednesday/Friday, Tuesday/Thursday, Tuesday Only, Wednesday Only, & Thursday only Day Classes December 18, 2018

Fall 2018 - Wednesday Evening Classes end with 120 minute final exam December 19, 2018

Fall 2018 - Thursday Evening Classes End with 120 minute final exam December 20, 2018

Nursing Evening Classes that began on May 29th End December 22, 2018

Revised 6/25/18

\* 160 minute meeting

\*\* 165 minute meeting



## Winter Session 2019

Winter Session 2019- Classes Begin January 2, 2019

Winter Session 2019- Last Day to Withdraw from Classes January 15, 2019

Winter Session 2019 -Classes End January 18, 2019

Martin Luther King Holiday- No Day or Evening Classes January 21, 2019

## Spring 2019

Spring 2019- Classes Begin Tuesday/Thursday Day & Evening, Tuesday only Day & Evening January 22, 2019

Spring 2019- Classes Begin Minimester 1 Tuesday/Thursday January 22, 2019

Spring 2019- Classes Begin Monday/Wednesday, Monday/Wednesday/Friday, Wednesday Day, Monday/Wednesday and Wednesday Evening \* January 23, 2019

Spring 2019- Classes Begin Minimester 1 Monday/Wednesday \*\* January 23, 2019

Spring 2019- Classes Begin Thursday only Day and Evening January 24, 2019

Spring 2019- Classes Begin Friday only Day January 25, 2019

Spring 2019- Classes Begin Saturday only Day January 26, 2019

Spring 2019- Classes Begin Monday only Day & Evening \*\*\* January 28, 2019

Presidents Day- No Day or Evening Classes February 18, 2019

Spring 2019- Last Day to Withdraw from Minimester 1 Classes March 1, 2019

Spring 2019- Minimester 1 Tuesday/Thursday Classes End with a 120 minute final exam March 12, 2019

Spring 2019- Minimester 1 Monday/Wednesday Classes End with a 120 minute final exam March 13, 2019

Spring 2019- Minimester 1 Final Grades Due March 15, 2019

Spring Break 2019 - March 18- March 23 (No Day or Evening Classes) March 18, 2019

Spring 2019- Minimester 2 Monday/Wednesday Classes Begin \*\* March 25, 2019

Spring 2019- Minimester 2 Tuesday/Thursday Classes Begin \*\*\*\* March 26, 2019

Spring 2019- Last Day to Withdraw from Full Semester Classes April 11, 2019

Patriots Day- No Day or Evening Classes April 15, 2019

Assessment Day- No Day Classes, Evening Classes Meet May 2, 2019

Spring 2019- Minimester 2 Last Day to Withdraw May 3, 2019





Spring 2019- Tuesday/Thursday Day Classes End (Final Exam May 14-17) May 7, 2019

Spring 2019- Tuesday only Day Classes End with a 120 minute final exam May 7, 2019

Spring 2019- Tuesday/ Thursday and Tuesday Evening End with a 120 minute final exam May 7, 2019

Spring 2019- Wednesday only Day Classes End with a 120 minute final exam May 8, 2019

Spring 2019- Wednesday Evening Classes End with a 120 minute final exam May 8, 2019

Spring 2019- Monday/Wednesday Evening Classes End with a 120 minute final exam May 8, 2019

Spring 2019- Thursday only Day Classes End (Finals Exam May 14-17) May 9, 2019

Spring 2019- Thursday Evening Classes End with a 120 minute final exam May 9, 2019

Spring 2019- Friday only Day Classes End with a 120 minute final exam May 10, 2019

Spring 2019- Saturday only Day Classes End with a 120 minute final exam May 11, 2019

Spring 2019- Monday/Wednesday & Monday/Wednesday/Friday Full Semester Classes End (Final Exam May 14-17) May 13, 2019

Spring 2019- Monday only Day Classes End (Final Exam May 14-17) May 13, 2019

Spring 2019- Minimester 2 Monday/Wednesday Classes End with 120 minute final exam May 13, 2019

Final Exams May 14-17 May 14, 2019

Commencement Day May 23, 2019



## **PARKING**

Validated student parking is available in designated municipal facilities in Lowell. Students are NOT required to have parking decals on their vehicles.

Validated parking for classes is available at:

**Roy Garage**

100 Market Street  
Lowell, MA 01852

**Downes Garage**

7 John Street  
Lowell, MA 01852

**Davidson Street Lot**

5 East Merrimack St.  
Lowell, MA 01852

**Ayotte Garage**

1 Post Office Square  
Lowell, MA 01852

Parking at the Lowell campus requires validation. Bring parking receipt along with Student ID to the following campus locations for validation:

- Talbot Building Lobby
- Pollard Building Lobby
- Federal Building Lobby
- Security Desk in the Cowan Center Building Lobby

MCC Student IDs can be obtained in the Student Lounge on Middle Street in Lowell or the Fitness Center in Bedford. We will now require our MLT students to wear their ID while on clinical practicums.



## **STUDENT SERVICES AND RESOURCES**

Middlesex Community College offers many support services to our students. Below you will find select services highlighted. Please refer to the MCC Student Handbook for a complete listing of services provided.

### **Center for Health and Wellness**

The Center for Health and Wellness at each campus provides health education programs and activities to promote physical and emotional wellbeing. Information is available on topics such as nutrition, stress reduction, birth control, AIDS, smoking cessation, alcohol/drugs issues, and disease prevention. Students, faculty, and staff can receive referrals to appropriate health care providers, as necessary. The Center also maintains required immunization and health records for all students. For additional information call 978-656-3235 (Lowell) or 781-280-3765 (Bedford). Students may also email Jonathan Crockett, Coordinator of the Center, at [crockettj@middlesex.mass.edu](mailto:crockettj@middlesex.mass.edu).

Health Services also handles all accident reports, immunization records, and student insurance information.

### **Disability Support Services**

The Disability Support Services (DSS) offices of Middlesex Community College provides academic accommodations and services to eligible students with documented physical, psychiatric, and/or learning disabilities. The Lowell office is located in the Cowan Center, third floor, and may be reached at 978-656-3258. The Bedford DSS office is located in the Enrollment Center, second floor, and may be reached at 781-280-3630. Students are encouraged to access disability support services to assist them in reaching their academic potential, as well as to assure equal access to the college. All information shared with the DSS office remains confidential.

### **Tutoring Services**

Through the services provided by the **Academic Centers for Enrichment (ACE)**, students can access individual and group tutoring, both online and in person.

Tutors lead study sessions, assist with projects and assignments, and provide guidance in the use of computers and learning tools. Tutoring is provided by professional and peer tutors in most subjects taught at Middlesex Community College.



The ACE department also provides **Supplemental Instruction** for most STEM, Health and English Composition I courses. Supplemental Instruction (SI) Leaders provide weekly study groups for students enrolled in targeted science, technology, engineering and mathematics (also known as STEM) courses. This coming fall 2015 SI will be available in English Composition courses as well!

If you have any questions or need help with a subject that is not listed, please email Noreen McGinness Olson at [mcginnessn@middlesex.mass.edu](mailto:mcginnessn@middlesex.mass.edu) with your request.

### **Supplemental Instruction**

Supplemental Instruction (SI) is a free academic support program available at MCC. The purpose of SI is to help students better understand concepts and applications of course content while building study skill strategies, improving their overall grade. SI leaders are attached to certain difficult STEM and Health courses at the college and will hold regularly scheduled study sessions outside of class each week.

By attending SI sessions on a regular basis, chances are you will:

- earn a better grade
- better understand course material
- teach and learn from your classmates
- develop effective study skills that can be applied to other classes

**We strongly encourage all students enrolled in SI sections  
to attend the study sessions!**

Please contact Christine Bell at [bellc@middlesex.mass.edu](mailto:bellc@middlesex.mass.edu) or 978-656-3358 or Noreen McGinness Olson at [mcginnessn@middlesex.mass.edu](mailto:mcginnessn@middlesex.mass.edu) or 781-280-3591 if you have any questions regarding Supplemental Instruction.



### **Personal Counseling and Consultation Services**

Personal Counselors are licensed mental health professionals who support and assist enrolled students as they cope with personal difficulties that are interfering with their academic progress. Personal counseling is confidential, short-term, goal-oriented, and free of charge. Personal counselors can assist students with referrals to outside services in cases where extended therapy or specialized assistance is required.

Some of the issues that students discuss with a personal counselor include:

- *feeling overwhelmed or stuck*
- *depression or persistent sadness*
- *anxiety/test taking anxiety*
- *stress and time management skills*
- *relationship issues or family concerns*
- *difficulty adjusting to college*
- *procrastination or motivation problems*

Bedford Campus, Enrollment Center, 2nd Floor  
(781) 280-3630

Lowell Campus, City Campus, 3rd Floor  
(978) 656-3258

For more information about personal counseling contact the [personal counselor](#) at your campus.

**For mental health emergencies after normal business hours, or off campus, go directly to your nearest hospital Emergency Room or call 911.**

**National Suicide Prevention Hotline: 1-800-273-TALK (8256), confidential toll-free help available 24/7.**

### **Pathways Center for Health and STEM Students**

The Health and STEM (Science, Technology, Engineering & Math) Pathways Center is committed to initiatives that are aimed at student achievement and success. We are located on the Lowell campus on the third floor of the Cowan Center, Room 306. We offer a variety of student supports that are focused on academic achievement and career outcomes to all Health and STEM students.

Please send any general inquiries to the Pathways Center at  
[pathwayscenter@middlesex.mass.edu](mailto:pathwayscenter@middlesex.mass.edu)



## COMPUTER LABS

Students may use computer labs on campus for course related needs. Lowell campus computer labs are located:

- Lowell Library- Federal Building
  - Monday – Thursday : 7:30 am – 9:00 pm
  - Friday: 7:30 am – 4:30 pm
  - Saturday: 11:00 am – 4:00 pm
  - Note: hours will vary during semester breaks
- Lowell Derby Building- Room 204
  - Available Monday – Friday: 8:30 am – 4:00 pm
  - Periodically there are classes scheduled in this lab, so availability may be changed. You may call 978-656-3030 to confirm availability.

## PROGRAM PROGRESSION

In order for a student to successfully progress through the Medical Laboratory Technology program, the student must, at a minimum:

- Complete pre-requisite requirements, if necessary. These required course prerequisites are BIO 131-General Biology, college level, with a grade of C or better and Chemistry with lab, high school or college, with a grade of C or better within the last 5 years.
- Minimum cumulative GPA of 2.5.
- Achieve a minimum grade of 73 in all Medical Laboratory Technology core courses.
- If less than a 73 is achieved in any MLT core course, the student will be referred to the Health Programs Progression and Readmission Policy (page 22).
- If a core course repeat is permitted, the student will have **one attempt** to achieve success in the course during the next course offering. If unsuccessful, the student will receive notification of program dismissal from the program coordinator.
- This course repeat policy applies to clinical practicums as well.
- Satisfactorily meet course objectives.



## **MIDDLESEX COMMUNITY COLLEGE**

### **NURSING AND ALLIED HEALTH DIVISION**

#### **Health Programs Progression and Readmission Policy**

Middlesex Community College strives to give students every reasonable opportunity to succeed in their chosen course of study, yet provide fair opportunity and access to all members of the college's community. Nursing and Allied Health Programs often have limited seats available. The following policy was developed to ensure a fair and equitable process for readmission decisions to health programs. All readmission decisions shall be based on space availability, academic progress and/or suitability for the profession. Generally, a student is eligible to seek readmission to a health program only once. The readmission process shall not be used to challenge a course grade or allege discriminatory conduct in a health program. In those cases, the College's Student Grievance Procedure and Affirmative Action Plan shall be utilized, respectively.

#### **Academic Progress:**

Satisfactory completion of all courses in a given semester is required in order to progress to the next semester in all health programs. To satisfactorily complete a semester in a health program, students must not only demonstrate a satisfactory level of performance in clinical settings, but also earn a grade of C or better in all courses within the area of specialization, (these courses are designated with a three letter code for the major, for example, "NUR" for Nursing and "SON" for Diagnostic Medical Sonography). In addition, students in the Nursing, Dental Hygiene and Radiological Technology programs must earn a grade of C or better in required science courses. If a student fails to meet these requirements, the student is not eligible to continue in the program and shall be dismissed upon written notification from the Program Coordinator, Department Chair, or Director who leads the program. The notification of dismissal shall also include information about the Nursing and Allied Health Programs' Student Readmission process and applicable timelines.

**Suitability for the Profession:** Students may not be recommended for readmission to a nursing or allied health program or admission to another health program if they are deemed unsuitable for a career in health care based on a variety of factors, including, but not limited to, the following:

- A pattern of unprofessional and/or unethical behavior off-campus or in a classroom, lab or clinical setting. In some circumstances a student's unprofessional behavior



- may be so severe that the student will be deemed unsuited for a career in health care based on one incident.
- Failure to meet the standards or technical skills for the program or profession.
- Unsafe clinical practice.
- Failure to demonstrate progressive and consistent mastery of theoretical and/or technical skills consistent with entry level practice for the specific health career.

### **Readmission Process:**

Students seeking readmission must write a letter requesting such to the Program Coordinator, Department Chair, or Director. This letter must be sent by email or US Mail within ten (10) calendar days of the student's receipt of the notification of dismissal. In the letter, the student should include the following:

- Explanation of the extenuating circumstances that prevented the student from being successful either academically or clinically. Extenuating circumstances may include, but are not limited to: personal injury or illness; family issues/difficulties; interpersonal problems; death of a relative; difficulty balancing responsibilities, etc. In addition, the student should provide documentation, if available, to verify the extenuating circumstances cited.
- Explanation of the changes planned that will enable the student to be successful. In addition, the student should provide documentation, if available, to verify the explanations offered.
- Explanation of the strategies that will be utilized to enable the student to be successful in the program in future semesters, if given the opportunity. The student should be specific and provide a rationale for each proposed strategy. Strategies might include, but are not limited to: a commitment to seek tutoring or counseling; a commitment to join a study group; a commitment to spend a set number of hours per class studying each week, etc. In addition, the student should provide any documentation that may verify the student's new commitment to the program.

### **Nursing and Allied Health Programs Student Review Committee:**

Readmission decisions are made by the Nursing and Allied Health Programs' Student Review Committee. The Student Review Committee has college-wide representation and is chaired by the Dean of Nursing and Allied Health. The Committee's membership includes a representative of each of the health programs, and at least one representative from each of the following areas: enrollment, admissions, student affairs and academic affairs.

Each semester, the Nursing and Allied Health Programs' Student Review Committee reviews the readmission requests of students who have withdrawn from, or failed a course(s) in a health program. The Committee meets at the end of each semester; generally 2-3 weeks after grades have closed. Readmission decisions are based on space availability, the student's academic progress and/or suitability for the profession.





A student's request for readmission will be considered along with faculty recommendations which are presented to the Committee by the Program Coordinator, Department Chair, or Director who leads the program. Students may also request a meeting with the Program Coordinator/Chair/ Director prior to the meeting of the Nursing and Allied Health Programs' Student Review Committee.

## **GRADUATION PROCEDURE**

As students are completing their program requirements during their final semester, they must complete a Graduation Application in order to be eligible for graduation. A student in the MLT Associate of Science degree program will be eligible for graduation even though MLT 255 Immunohematology Practicum will not be completed until June of the fourth semester. Graduation applications are available online or in the Student Information Center in the Cowan Center Building. There is no fee for application to graduate. Students must pay close attention to the application deadline.

Caps, gowns, and invitations to commencement will be available as scheduled in the Lowell City Building Cafeteria. Commencement will be held at the Lowell Memorial Auditorium on the designated date at 10:00 am. Graduates should arrive by 8:30 am. Visit the website online for more information.

Graduation Honors:

Candidates for the associate degree whose cumulative GPA is at least:

**3.20- Honors**

**3.50 High Honors**

**3.70 Highest Honors**

*To be eligible for graduation honors, students must earn a minimum 35 semester hours at Middlesex Community College.*

*Honors read at the Commencement ceremony are based on the graduate's GPA at the end of the fall semester.*

Every graduate's name is announced during the ceremony. If you prefer a certain pronunciation of your name, contact the Multicultural Center at 978-656-3267 by the deadline stated on the college website.



### **TUITION AND FEES**

All students, whether they study during the day, evening, weekends, or any combination, will be charged the same amount per credit, unless indicated otherwise for specific courses/ programs. The tuition and fee rates are listed in the Appendix of this handbook.

### **WITHDRAWAL AND REFUND POLICY**

When a student drops or withdraws from a course, processing, instructional and other costs must still be met by the college. Therefore, refunds for official withdrawals from credit courses are adjusted and listed in separate documents in the Appendix of this handbook.

### **FINANCIAL AID WITHDRAWAL POLICY**

For more information regarding the withdrawal policy and its effects on financial aid please visit their website at <https://www.middlesex.mass.edu/financialaid/withdrawal.aspx>.

**Important:** To be eligible for refund students **MUST officially withdraw from their class/classes** by notifying the College in writing, in person, online, or by calling 1-800-818-3434. Official course withdrawal forms are available at each campus Student Information Center. Lack of attendance, course abandonment, etc., does not constitute course withdrawal. A student receiving Federal Title IV aid and who has officially withdrawn from the college may be entitled to a refund of tuition and fees in accordance with the federally mandated schedule.

\*\*\*Please see the Appendix of this handbook for the new Middlesex Community College Withdrawal Policy instituted for fall 2018.



## CHAPTER 3

### Medical Laboratory Technology Student Information



## **The Medical Laboratory Technician Profession**

Medical Laboratory Technicians (MLTs) constitute a large portion of the 300,000 medical laboratory professionals working in the United States. According to the American Society for Clinical Pathology (ASCP), "a medical laboratory technician searches for basic clues to the absence, presence, extent, and causes of diseases. This skilled individual is responsible for performing laboratory tests efficiently and accurately for high-quality patient care."

Medical laboratory technicians work in a medical laboratory, often under the guidance or supervision of a medical technologist (MT). The nature of the work is similar in that the Medical Laboratory Technician also works with laboratory equipment, helping to prepare and analyze slides and specimens of human blood, tissue, or other cells.

Medical Laboratory Technicians help to support the work of medical technologists, to help identify abnormalities in the samples such as malignancies, bacteria, parasites, or genetic abnormalities. Medical laboratory technicians also perform blood-typing and other routine blood tests. Medical laboratory technicians do similar work but at a less complex level as medical technologists, as educational requirements for medical laboratory technicians are less than the requirements for medical technologists.

## **Standard (Essential) Skills for Medical Laboratory Technician**

The following is a list of standard (essential) and/or technical skills required for performing duties in the medical laboratory field. These skills are not conditions for admission to the program, but do indicate abilities and characteristics necessary for successful completion of the medical laboratory technician program, and to perform the duties of the career upon graduation.

- Demonstrate sufficient motor skills to manipulate and operate all equipment and instruments found in the clinical laboratory. Such motor skills should include but may not be limited to the following:
  - Ability to grasp, turn and otherwise manipulate equipment with both hands.
  - Possess finger and manual dexterity necessary to control laboratory equipment (i.e. pipettes, inoculating loops, test tubes) and adjust instrument to perform laboratory procedures.
  - Ability to stand and move between different clinical departments in the laboratory.
  - Ability to approach and position the patient when necessary for laboratory procedures.
  - Use a computer keyboard to operate laboratory instruments and to calculate, record, evaluate, and transmit laboratory information.
- Display the verbal and written skills necessary to effectively respond and communicate with patients, peers and other campus and clinical personnel.
  - Read and comprehend technical and professional materials



- Follow verbal and written instructions in order to correctly and independently perform laboratory test procedures.
  - Clearly instruct patients prior to specimen collection.
  - Effectively, confidentially, and sensitively converse with patients regarding laboratory tests.
- Demonstrate the ability to visually observe and evaluate patient conditions, test reactions and results, and the total laboratory environment.
  - Discern and discriminate color differences and reactions both microscopically and macroscopically.
  - Exhibit adequate hearing ability in order to respond appropriately to both patients and co-workers, and to audible equipment sounds.
  - Manage heavy academic schedules and deadlines.
  - Be able to manage the use of time and be able to systemize actions in order to complete professional and technical tasks within realistic constraints.
  - Demonstrate the cognitive ability to recognize and deal with any potential hazards in the laboratory environment, and protect oneself and others from injury.

## **Student Conduct**

The Medical Laboratory Technology Program has a responsibility to maintain high professional standards. Conduct of the medical laboratory technician student reflects upon the individual, the MLT Program and Middlesex Community College. The Medical Laboratory Technology Program supports the Middlesex Community College Student Handbook and all its policies, including the MCC Code of Conduct, Code for Academic Integrity and Core Commitments. The MCC Student Handbook may be viewed on the college website

[www.middlesex.mass.edu/deanofstudents/studhand2.asp](http://www.middlesex.mass.edu/deanofstudents/studhand2.asp)



## **ASCLS Code of Ethics**

The ASCLS Code of Ethics serves to establish a standard for laboratory professionals to uphold a high level of ethical decision making throughout all aspects of the profession. The faculty adopts this Code as part of our medical laboratory technician program's code of conduct. Students should become familiar with this code of ethics and use this as a guidepost for their actions.

### Code of Ethics

#### Preamble

The Code of Ethics of the American Society for Clinical Laboratory Science sets forth the principles and standards by which clinical laboratory professionals practice their profession.

#### **I. Duty to the Patient**

Clinical laboratory professionals are accountable for the quality and integrity of the laboratory services they provide. This obligation includes maintaining individual competence in judgement and performance and striving to safeguard the patient from incompetent or illegal practice by others.

Clinical laboratory professionals maintain high standards of practice. They exercise sound judgment in establishing, performing and evaluating laboratory testing.

Clinical laboratory professionals maintain strict confidentiality of patient information and test results. They safeguard the dignity and privacy of patients and provide accurate information to other health care professionals about the services they provide.

#### **II. Duty to Colleagues and the Profession**

Clinical laboratory professionals uphold and maintain the dignity and respect of our profession and strive to maintain a reputation of honesty, integrity and reliability. They contribute to the advancement of the profession by improving the body of knowledge, adopting scientific advances that benefit the patient, maintaining high standards of practice and education, and seeking fair socioeconomic working conditions for members of the profession.

Clinical laboratory professionals actively strive to establish cooperative and respectful working relationships with other health care professionals with the primary objective of ensuring a high standard of care for the patients they serve.



### III. Duty to Society

As practitioners of an autonomous profession, clinical laboratory professionals have the responsibility to contribute from their sphere of professional competence to the general wellbeing of the community.

Clinical laboratory professionals comply with relevant laws and regulations pertaining to the practice of clinical laboratory science and actively seek, within the dictates of their consciences, to change those which do not meet the high standards of care and practice to which the profession is committed.

### Pledge to the Profession

As a clinical laboratory professional, I strive to:

- Maintain and promote standards of excellence in performing and advancing the art and science of my profession.
- Preserve the dignity and privacy of others.
- Uphold and maintain the dignity and respect of our profession.
- Seek to establish cooperative and respectful working relationships with other health professionals.
- Contribute to the general wellbeing of the community.

I will actively demonstrate my commitment to these responsibilities throughout my professional life.

### **Clinical Attire/Personal Appearance**

The dress code policy is designed to ensure that our students put forth a professional appearance both in the classroom and at the clinical sites. Each student is expected to demonstrate professionalism in both conduct and appearance.

***Due to the nature of the work performed in our simulated lab/classroom on campus, students are required to wear the program uniform which consists of a royal blue scrub top and royal blue scrub pants with the MCC Medical Laboratory Technician patch sewn on the left sleeve of the scrub top.***

Lab coats, face shields, and gloves are provided when working in the lab. Long hair must be tied back. Long dangling jewelry and/or scarves that may get caught in automated analyzers are not permitted in the MLT classroom.



### **CLINICAL SITES:**

- **CLOTHES**-All MCC MLT students are required to wear the required program uniform. This consists of a royal blue scrub top and royal blue scrub pants with the MCC Clinical Laboratory Science patch sewn on the left sleeve of the scrub top. These may all be purchased at the MCC book store.
- **LAB COAT**- Lab coats will be provided by the clinical site and all regulations provided by the clinical affiliate regarding lab coat use must be adhered to strictly.
- **SHOES**- Open toe shoes or sandals are not permitted in any clinical area. Shoes with soft soles, sneakers or health care uniform shoes are permitted.
- **COSMETICS/NAILS/HAIR**- facial cosmetics should be used with discretion as to maintain a professional appearance. Many clinical laboratories have policies regarding the use of perfumes and colognes. Please adhere to each affiliate's policies regarding this matter. Hair should be clean and neat. Hair that is longer than shoulder length should be tied back so as not to cause any safety issues. Nails are to be kept short and clean.
- **SMOKING**- Smoking is not permitted in any of our clinical sites. Many of our affiliates are now requiring a nicotine screening test prior to accepting students for externships. Smokers will not be permitted to participate in a clinical at these sites if they test positive.
- **JEWELRY**- Jewelry must be kept to a minimum so as not to pose a safety hazard. Wedding rings/bands, small earrings and wrist watches are acceptable. Any long hanging necklaces or scarves are not permitted in clinical areas. Facial piercings must be removed before reporting to a clinical site.

### **Cell Phones/Smart Phones and Tablets**

During clinical and didactic classroom time, all personal electronic devices must be switched into silent mode. These devices must be stored away safely during class time.





## **Academic Integrity**

The College's code for academic integrity will be strictly applied as outlined in the MCC Student Handbook.

*“Adherence to ethical standards is obligatory; members of the college community are expected to be honest and forthright in their undertakings. To falsify the results of one's work, to present the words, ideas, data, or work of another as one's own, or to cheat on an examination, is a serious offense. If it is proven that a student, in any course in which he or she is enrolled, has knowingly committed such a violation, suspension from the course and a failing grade in the course may result. Due process is accorded to students in the event of any alleged violation of college regulations”*

For more detailed information, refer to the MCC Student Handbook as well as each medical laboratory technician course syllabus. MCC Student Code of Conduct and Student Grievance Procedure can be found in the Appendix section of this Handbook.

## **CORI/SORI**

In order for a student to be eligible to participate in a clinical externship, the student will be required to undergo a Criminal Offender Record Information (CORI) check and/or a Sex Offender Registry Information (SORI) check. The College is authorized by the Commonwealth's Criminal History Systems Board, pursuant to Massachusetts General Laws, Chapter 6, Sections 167-178B, to access CORI records. The College shall refer to regulations issued by the Commonwealth's Executive Office of Health and Human Services, 101 Code of Massachusetts Regulations 15.00-15.16, as guidance when assessing student CORI records. Sex Offender checks shall be performed pursuant to Massachusetts General Laws, Chapter 6, Sections 178C-178P. If a student is allowed to enroll or participate in such a program despite having certain criminal convictions or pending criminal actions, this is no guarantee that a future employer would also disregard such criminal record.

For more information regarding the college's CORI/SORI check process, contact the Human Resources Department at 781-280-3532.

## **TRANSPORTATION**

Students are responsible for their own transportation to clinical practicum sites. Every effort is made to accommodate extenuating circumstances, but the ultimate responsibility lies with the student. Many of our clinical affiliates are within a reasonable distance from the college.



## **SCHOOL/CLINICAL PRACTICUM CANCELLATIONS**

In the event of inclement weather, school cancellations are broadcast on the following:

TV stations:

Channel 4

Channel 5

Channel 7

Radio stations:

WBZ (1030am)

WCAP (980am)

WRKO (680am)

**Or Download the FREE MCC Mobile app to your smart phone.**

Cancellations and notifications appear there, as well as news, events, and other useful information. Available for iPhone, iPad, Android, and Blackberry.

If school is cancelled, students DO NOT report to their externship. If the clinical externship is during semester break, the Clinical Coordinator will make the decision to cancel for the day and will notify the students and the clinical affiliates of the cancellation. All cancellations due to weather or school closings must be made up.

## **ATTENDANCE**

Attendance is required in both the clinical and classroom setting. Attendance is recorded in all MLT courses and clinical practicums. Excessive absenteeism may result in the termination of the student at the Program Coordinator's discretion. Please refer to each individual course syllabus for specific attendance requirements. All absences from the clinical practicums must be made up. If the student needs to miss a clinical for any reason, he/she is responsible for notifying the MCC program coordinator and the contact person at the clinical affiliate.

## **COMPETENCY-BASED CURRICULUM**

Middlesex Community College is proud to set its Medical Laboratory Technology program apart from other local programs by offering a competency- based curriculum. Students will be provided with the essential didactic and hands-on knowledge needed to successfully perform in the clinical practicum setting. The faculty of the MLT program have developed rigorous criteria for the skills and laboratory techniques that are required to successfully complete the clinical practicum rotation in the various departments of the clinical laboratory. The purpose of the competency-based curriculum is to decrease the time that the student needs in the clinical setting for each discipline. This allows the clinical practicum instructors to concentrate more on automation and work flow rather than having to re-teach the laboratory techniques required for each laboratory section.



Each student will be required to complete the specified tasks set forth by the MLT program faculty in a self-directed fashion with the samples and instrumentation provided by the college. Each student must demonstrate proficiency and competency for each prescribed task before being allowed to go out to the clinical site for each laboratory discipline. Competency will be demonstrated by completing reading materials provided by the college, completing quizzes pertaining to the reading material, analyzing unknown patient samples provided by the college as well as demonstrating the ability to analyze samples in a pre-determined time frame. Students who fail to complete these tasks within the prescribed time frame will not be allowed to go to the clinical practicum.

## **HEALTH PROGRAMS**

### **BLOOD and BODY FLUIDS EXPOSURE (STUDENTS)**

#### **POLICY:**

Any injury which results in an exposure (of mucous membranes, open skin lesions by sharp instruments or needle sticks) to blood or other body fluids at on-campus clinics, laboratories, or off campus clinical affiliation sites should be reported to the Program Coordinator at the time of the exposure. The following guidelines should be used to protect the student and provide immediate assistance. The referral for an exposure should be to an emergency facility.

#### **A. Report Exposure Incident / First Aid:**

1. Inform Clinical Instructor or Clinical Supervisor of the exposure immediately before continuing any further patient procedures.
2. Initiate first aid by cleansing affected areas well: mucus membrane, open skin lesions, site of needle stick or sharp instrument puncture, etc.

#### **B. Exposure Counseling:**

1. The Clinical Instructor or Clinical Supervisor is responsible to ensure that the student and source patient are provided with information about:
  - (a) the importance of testing immediately for HIV, HBV, and HCV (CDC guidelines 6/01).
  - (b) confidentiality of testing and reporting (written permission required for both at the testing site.)

#### **C. Cost of Testing:**

1. Student's insurance should be billed for the testing (and chemoprophylaxis if warranted). Insurance information should be given to the site where testing is performed.

#### **D. Referral:**

1. The student and source patient should be referred immediately to a hospital emergency facility.
2. The Clinical Instructor or Clinical Supervisor should call ahead to the emergency facility to notify of arrival, if applicable.
3. If the student chooses to use his/her own personal health care provider, the Clinical Instructor or Clinical Supervisor should inform the health care provider 's office of



- the nature of the exposure (with the student's permission) and request testing as soon as possible, preferably within two hours. (If the student is unable to be seen quickly, request that the health care provider's office authorize a referral to a hospital emergency unit).
4. As a source of information for decision-making at the testing site, a copy of the Accident Report should be sent with the student. The Health Clearance Officer should be contacted to determine the last Tetanus-diphtheria date and Hepatitis B immune status.
- E. Accident Report:**
1. The Clinical Instructor or Clinical Supervisor or the student should complete the **Accident Report: Blood and Body Fluid Exposure** form.
  2. The original Accident Report should be sent to the Health Clearance Officer with copies to the Program Coordinator.
- F. Refusal of Evaluation:**
1. The student has the right to refuse testing and evaluation. In this case, the student should sign the Declination of Testing and/or Follow-up Procedures statement on the **Accident Report: Blood and Body Fluid Exposure form**.

Accepted: 5/04

Reviewed: 5/08

Revised: 10/12, 7/18



# **CHAPTER 4**

## **MEDICAL LABORATORY TECHNOLOGY**

### **CURRICULUM**



## **MEDICAL LABORATORY TECHNOLOGY ASSOCIATE DEGREE PROGRAM**

### **Required Courses**

- BIO 231 - Anatomy And Physiology I 4 ♦
- BIO 232 - Anatomy And Physiology II 4
- CHE 131 - College Chemistry I 4
- CHE 132 - College Chemistry II 4
- MLT 105 - Introduction to Clinical Laboratory Science 3
- MLT 106 - Basic Clinical Laboratory Theory and Techniques 4
- ENG 101 - English Composition I 3 ♦
- ENG 102 - English Composition II: An Introduction To Literature 3 ♦
- ETH 105 - Introduction To Bioethics 3 ♦
- MAT 177 - Statistics 3 ♦
- PSY 101 - Introduction To Psychology 3 ♦
- SOC 101 - Introduction To Sociology 3 ♦
- MLT 151 - Urinalysis and Body Fluids 1
- MLT 152 - Urinalysis and Body Fluids Practicum 1
- MLT 201 - Hematology Theory and Lab 4
- MLT 202 - Clinical Chemistry/Lab 4
- MLT 203 - Medical Microbiology/Lab 4
- MLT 204 - Immunology and Serology 4
- MLT 205 - Clinical Chemistry Practicum 2
- MLT 251 - Immunohematology/Lab 4
- MLT 252 - Hematology Practicum 2
- MLT 253 - Microbiology Practicum 2
- MLT 254 - MLT Seminar 1
- MLT 255 - Immunohematology Practicum 2

**PLEASE NOTE: AN ACADEMIC CURRICULUM MAP FOR THE MLT PROGRAM  
MAY BE FOUND IN THE APPENDIX OF THIS HANDBOOK.**



## **COURSE DESCRIPTION**

### **BIO 231 - Anatomy and Physiology I (4 credits)**

This course is the first half of an intensive two-semester sequence designed to integrate the study of the structure and function of the human body. The semester begins with a study of the chemical and cellular levels of organization as related to molecular biology, cellular transport, and histology. The central theme of homeostasis then is applied to the integumentary, skeletal, muscular systems and nervous system. 3 hours lecture/2 hours laboratory

**Prerequisite(s):** Completion of or concurrent enrollment in ENG 101; completion of BIO 131 in the last five years with a C or better or 73% or better on the A & P Prerequisite Exam.

### **BIO 232 - Anatomy and Physiology II (4 credits)**

This course is the second half of an intensive two-semester sequence designed to integrate the study of the structure and function of the human body. The semester includes study of the special senses, the endocrine system, cardiovascular system (blood, heart and blood vessels), lymphatic and immune system, respiratory, digestive, urinary and reproductive systems. The concept of homeostasis and its disruption by disease conditions is emphasized, providing a framework in which to integrate all systems into a functioning whole. 3 hour lecture/2 hour laboratory

**Prerequisite(s):** Completion of BIO 231 with a C or better.

### **CHE 131 - College Chemistry I (4 credits)**

The fundamental concepts of inorganic chemistry including the physical and chemical properties of matter, atomic structure, chemical bonding, stoichiometry, the gas laws, solutions, acids and bases, redox reactions, and chemical equilibria. The laboratory includes an experimental study of the chemical principles. 3 hours lecture/3 hours laboratory

**Prerequisite(s):** Eligible for ENG 101; and eligible for MAT 080, Math Module 70 or 80.

### **CHE 132 - College Chemistry II (4 credits)**

A systematic study of the structures, nomenclature, physical properties, and chemical reactions of the classes of organic compounds, progressing to a study of biochemistry and the compounds of life: carbohydrates, lipids, proteins, and nucleic acids. The laboratory includes an experimental study of the chemical principles. 3 hours lecture/ 3 hours laboratory

**Prerequisite(s):** Completion of CHE 131 with a C or better.

### **MLT 105 - Introduction to Clinical Laboratory Science (3 credits)**

*Formerly CLS 101*

This provides an introduction to clinical laboratory science, including history of the profession, an introduction to the laboratory departments, laboratory safety, and concepts and procedures used in a professional medical laboratory. Preanalytic, analytic, and postanalytic variables will be discussed. The student will also be introduced to the accreditation process, certification, licensure, professionalism and ethics in healthcare today.

**MLT 106 - Basic Clinical Laboratory Theory and Techniques (4 credits)**

*Formerly CLS 102*

This course offers an introduction to the diagnostic techniques and procedures of the clinical laboratory. Topics include qualitative, quantitative and automated laboratory techniques, including an introduction to basic skills performed in urinalysis, hematology, chemistry, immunology, microbiology and immunohematology. This is achieved through both didactic and laboratory sessions.

**ENG 101 - English Composition I (3 credits)**

English Composition I focuses on developing students' academic writing, close reading, and critical thinking skills. Using a writing process that includes pre-writing, drafting, instructor and peer feedback, and revision, students will produce written essays with arguable thesis statements and appropriate use of standard English. Students will produce a total of 18-24 pages of formal polished writing in three or more source-based essays.

**ENG 102 - English Composition II: An Introduction to Literature (3 credits)**

Building on skills learned in English Composition I, students will sharpen their academic writing, close reading, and critical thinking skills, as well as develop research skills. Using a writing process that includes pre-writing, drafting, instructor and peer feedback, and revision, students will produce thesis-driven, evidence-based essays that employ appropriate rhetorical strategies. In English Composition II, students will be introduced to at least two documentation styles and will produce a total of 18-24 pages of polished formal writing in three or more source-based essays.

**Prerequisite(s):** Completion of ENG 101 with a C- or better.

**ETH 105 - Introduction to Bioethics (3 credits)**

An introductory study of contemporary issues in bioethics and the ethical theories that serve as a framework for making decisions about those issues. The topics covered will include: ethical dilemmas in the workplace, professional relationships to patients and experimental subjects, reproductive decision-making, decisions about the end of life, issues in biomedical research, and justice in health care. Appropriate for all students but particularly relevant for students in the Biotechnology and Health Careers programs.

**Prerequisite(s):** Eligible for ENG 101.

**MAT 177 – Statistics (3 credits)**

A general statistics course, which includes understanding data, measures of central tendency, measures of variation, binomial distributions, normal distributions, correlation and regression probability and sampling distributions, Central Limit Theorem, confidence intervals, estimates of population parameters and hypotheses testing. Interpretation and data analysis are emphasized.

**Prerequisite(s):** Eligible for ENG 101; placement above or completion of MAT 080 with a C or better or completion of Math Module 12, 73, or 82.



**PSY 101 - Introduction to Psychology (3 credits)**

This course introduces students to the scientific study of the mind and behavior and to the applications of psychological theory to life. Topics include: research methods; biopsychology; lifespan development; memory; learning; social psychology; personality; and psychological health and disorders. This course will establish a foundation for subsequent study in psychology.

**Prerequisite(s):** Eligible for ENG 101.

**SOC 101 - Introduction to Sociology (3 credits)**

This course is an introduction to the study of society and social behavior. Topics covered include sociological theory, research methods, culture, socialization, deviance, social institutions, social stratification, global inequalities, gender, race, ethnicity, social movements and social change.

**Prerequisite(s):** Eligible for ENG 101.

**MLT 151 - Urinalysis and Body Fluids (2 credits)**

*Formerly MLT 101*

This course provides the student with a foundation for performing urine and body fluid analysis. The anatomy and physiology of the renal system, urine formation, chemical analysis of urine and the microscopic examination of urinary sediment will be introduced. Urinary and metabolic diseases as they relate to urinalysis findings will be discussed. An introduction to body fluids and their clinical significance will be examined.

**Prerequisite(s):** Completion of MLT 105 and MLT 106, both with a C or better.

**MLT 152 – Urinalysis Practicum (1credit)**

*Formerly MLT 102*

This course provides the student experience and competency in performing routine urinalysis and microscopic examination of urinary sediments.

**Prerequisite(s):** Completion of MLT 151 with a C or better.

**MLT 153- Immunology and Serology**

*Formerly MLT 204*

This course provides the student with a foundation of immunology and serology. Topics include components of the immune system, basic immunoassay principles and immunologic techniques, and the clinical symptoms and laboratory findings associated with diseases and disorders of the immune system in the human body. Serological procedures will presented and their diagnostic significance emphasized.

**Prerequisite(s):** Completion of MLT 105 and MLT 106, both with a C or better.

**MLT 201 - Hematology Theory and Lab (4 credits)**

This course provides the student with a foundation of hematology in the clinical laboratory setting. Analysis and interpretation of test results as they correlate to clinical diagnosis will be discussed.

**Prerequisite(s):** Completion of MLT 152, MLT 153, BIO 232 and CHE 132, all with a C or better.

**MLT 202 - Clinical Chemistry Theory and Lab (4 credits)**

This course provides the student with a foundation of the principles of clinical chemistry. The theory of manual chemistry testing as it applies to automated procedures will be introduced. Analysis and interpretation of test results as they correlate to clinical diagnosis will be discussed.

**Prerequisite(s):** Completion of MLT 153 with a C or better.

**MLT 203 - Medical Microbiology Theory and Lab (4 credits)**

This course provides the student with a foundation in medical microbiology. Microscopic organisms, including bacteria, protozoa, fungi, and parasites are discussed, with an emphasis on the role these organisms play in health and disease. Aseptic laboratory techniques, varied cultivation methods, and standard diagnostic procedures are included.

**Prerequisite(s):** Completion of MLT 153 with a C or better.

**MLT 205- Clinical Chemistry Practicum (2 credits)**

This course provides the student with experience and competency in the clinical chemistry laboratory through integration of knowledge and skills gained in foundational courses. Chemistry instrumentation, methodologies and clinical interpretation and correlation of laboratory results will be emphasized.

**Prerequisite(s):** Completion of MLT 202.

**MLT 251- Immunohematology Theory and Lab (4 credits)**

This course provides the student with a foundation of immunohematology. Focus is placed on red blood cell immunology as it relates to ABO/Rh typing procedures, antibody detection and identification techniques and compatibility testing. Hemolytic disease of the newborn, component therapy, transfusion reaction investigation, quality control and problem solving will be introduced. Blood donor program regulations will be discussed.

**Prerequisite(s):** Completion of MLT 201, MLT 202, MLT 203, all with a C or better.

**MLT 252 - Hematology Practicum (2 credits)**

This course provides the student with experience and competency in the hematology laboratory through integration of knowledge and skills gained in foundational courses. Hematology instrumentation, methodologies and clinical interpretation and correlation of laboratory results will be emphasized.

**Prerequisite(s):** Completion of MLT 201 with a C or better.

**MLT 253 – Medical Microbiology Practicum (2 credits)**

This course provides the student experience and competency in the clinical microbiology laboratory through the integration of knowledge and skills gained in foundational courses. The student will be exposed to manual methodologies, instrumentation, and clinical interpretation and correlation of laboratory results to various disease states.

**Prerequisite(s):** Completion of MLT 203 with a C or better.

**MLT 254 - MLT Seminar** (1 credit)

This course provides the opportunity for students to develop and apply critical thinking skills and technical knowledge to a variety of laboratory case studies. The student will also gain experience in preparing for the American Society for Clinical Pathology (ASCP) Board of Certification (BOC) Examination for medical laboratory technicians.

**Prerequisite(s):** Completion of MLT 201, MLT 202, MLT 203, all with a C or better.

**MLT 255 - Immunohematology Practicum** (2 credits)

This course provides students with experience and competency in the immunohematology laboratory through the integration of knowledge and skills gained in foundational courses. Methodologies, instrumentation and clinical interpretation and correlation of laboratory results will be emphasized.

**Prerequisite(s):** Completion of MLT 251 with a C or better.

## Grading Policy

The student should refer to each individual course syllabi for the grading policy. This applies to both didactic/laboratory courses and clinical practicum courses. Each instructor will follow the grading system of Middlesex Community College which is:

Grade	Points	Interpretation
A	4.00	93-100
A-	3.65	90-92
B+	3.35	87-89
B	3.00	83-86
B-	2.65	80-82
C+	2.35	77-79
C	2.00	73-76
C-	1.65*	70-72
D+	1.35*	67-69
D	1.00*	63-66
D-	0.65*	60-62
F	0.00	Failure; official withdrawal after 10 weeks

## Grade Appeal

Complaints or Grievances filed in connection with assigned grades represent a special case within the Grievance procedure. Grading reflects careful and deliberate assessment of a student's performance by the instructing professional(s). As such, decisions are necessarily judgmental and the substance of those decisions may not be delegated to the Grievance



process. Nevertheless, the College recognizes that in rare cases the process of grading may be subject to error or injustice.

Except as otherwise provided by a separate appeal procedure for a clinical program as approved by the President of the College, a student who alleges an error or injustice in the grading process may file a Grievance under the Student Grievance Procedure. A grade appeal Grievance shall proceed no further than Level Two, Step Two. (See Handbook Appendix)

For purposes of a grade appeal, the Senior Academic Officer of the College, or his/her designee, shall serve as the Student Grievance Officer throughout the grade appeal process.

If the faculty member who assigned the challenged grade is no longer employed by the College or is not available within the timelines specified (see "Time" definition), the student may initiate his/her Level One complaint with the chief administrator of the appropriate instructional division (who shall be identified by the Senior Academic Officer).

If at any level substantial evidence of error or injustice is produced, the grading process may be remanded to the instructor of record for reassessment. If after reassessment, the dispute remains unresolved, the matter shall be referred to the Senior Academic Officer, or his/her designee, for final review. If the instructor of record is no longer available, the Senior Academic Officer or his/her designee shall instead reassess the grading process.

Credits for the Associate of Science degree include a minimum grade of "C" or better (73) in each major course in the technical curriculum. No more than one (1) program course may be repeated, and that course may be repeated **only one time**. In other words, failure of two (2) program courses, or failure of one (1) course twice, will cause the student to be ineligible to re-enroll in the Medical Laboratory Technician program.

Dismissal from the MLT program may be considered when misconduct by a student results in disciplinary action. These breaches of conduct are stated in the MCC Student Code of Conduct brochure found in the Appendix of this Handbook.



## **CHAPTER 5**

# **CLINICAL PRACTICUMS**



## **CLINICAL PRACTICUMS**

The program coordinator of the Medical Laboratory Technology Program at Middlesex Community College will make every effort to place a student at a clinical affiliate that is within a reasonable travel distance. Due to circumstances out of our control, usually due to staffing issues at the clinical site, students may be placed later than expected or at a site further than desirable for travel.

### **Clinical Affiliates**

Beth Israel Deaconess Medical Center  
330 Brookline Avenue  
Boston, MA 02215  
Contact: Gina McCormack, Laboratory Operations Director  
617-667-2342

Beverly Hospital  
85 Herrick Street  
Beverly, MA 01915  
Contact: Dave Sciamanna, Laboratory Manager  
978-922-3000

Emerson Hospital  
133 ORNAC  
Concord, MA 01742  
Contact: George Rooney, Laboratory Director  
978-369-1400

Hallmark Health- Melrose-Wakefield Hospital  
585 Lebanon Street  
Melrose, MA 02176  
Contact: Laurie Savarino  
781-979-3000

Hallmark Health- Lawrence Memorial Hospital- Medford  
170 Governors Avenue  
Medford, MA 02155  
Contact: Laurie Savarino  
781-306-6000



Holy Family Hospital- Methuen Campus  
70 East Street  
Methuen, MA 01844  
Contact: Susan Sullivan, Laboratory Director  
978-687-0151

Holy Family Hospital- Haverhill Campus  
140 Lincoln Avenue  
Haverhill, MA 01840  
Contact: Susan Sullivan, Laboratory Director

Lahey Medical Center  
41 Mall Road  
Burlington, MA 01805  
Contact: Martha Shaughnessy, Education Coordinator  
781-744-2338

Lawrence General Hospital  
1 General Street  
Lawrence, MA 01841  
Contact: Alison Scarry, Laboratory Director  
978-683-4000

Lowell General Hospital- Main Campus  
245 Varnum Avenue  
Lowell, MA 01854  
Contact: Shirley Murrant, Laboratory Director  
978-937-6000

Lowell General Hospital- Saints Campus  
1 Hospital Drive  
Lowell, MA 01852  
Contact: Shirley Murrant, Laboratory Director  
978-458-1411

Nashoba Valley Medical Center  
200 Groton Road  
Ayer, MA 01432  
Contact: Arlene Greathead



Quest Diagnostics  
200 Forest Street  
Marlborough, MA 01752  
Contact: Michael Hellyar, Laboratory Director  
800-618-9992

St. Elizabeth's Medical Center  
736 Cambridge Street  
Brighton, MA 02135  
Contact: Lisa Zenkin  
617-789-3000

St. Joseph Hospital  
172 Kinsley Street  
Nashua, NH 03060  
Contact: Lisa Fitzpatrick, Education Coordinator  
603-882-3000

Clinical placements will be announced the semester prior to MLT practicum classes. Whenever possible, student preferences for clinical sites are taken into consideration. Due to the scheduling nature of clinical affiliates, it is possible that not all students will be placed into clinical rotations simultaneously. In other words, the start of some student clinical rotations could be delayed. With the assistance of our clinical affiliates, the delay period should not exceed 30 days. During this waiting period, the student will still have access to course instructors, training modules, equipment and slides.

Placement of students in the clinical rotations will be determined by the following:

1. Academic performance in the MLT program, evaluated by the average course percent grade for each MLT course.
2. Instructor recommendation. Often students are recommended on their compliance with the absence and tardy policies and alignment with the MLT program mission statement.
3. Proximity to the clinical affiliate.





## AFFECTIVE OUTCOMES

**These outcomes apply to the overall performance and participation by the student during clinical practicums at the affiliate institutions.**

- Comply with the established dress code policy of Middlesex Community College and its' clinical affiliates.
- Report to the laboratory at the scheduled time.
- Notify the MCC MLT Program Coordinator and Clinical Instructor at the site when unable to report to the clinical practicum.
- Demonstrate the ability to ask pertinent questions or for assistance if needed.
- Demonstrate the ability to work independently within student guidelines.
- Communicate courteously, effectively and professionally with instructors, laboratory staff, other health care personnel, patients and visitors.
- Demonstrate interest and enthusiasm for the clinical laboratory science profession.
- Accept evaluation of performance as constructive when offered by instructors and other laboratory personnel, and follow through with suggestions made.
- Adhere to laboratory safety regulations in each clinical area.
- Maintain a clean, organized work area.
- Utilize reagents and supplies judiciously.
- Replenish supplies required in the laboratory work area.
- Demonstrate self-confidence in the operation of equipment and in the performance of laboratory procedures.
- Report patient laboratory results only to authorized personnel.
- Maintain the confidentiality of all privileged information.
- Demonstrate organizational skills through ability to coordinate the quantity of work needed to be done with the time available for its completion.
- Practice acceptable quality assurance as established for each clinical area.
- Maintain composure and work quality work under stressful conditions.

## PROFESSIONALISM

The student is expected to conduct himself/herself in a professional manner at all times. The ability to communicate in a respectful manner under all circumstances is an expectation of a professional. The student must remember that all patient information is privileged and as such strict confidentiality must be maintained.



## ATTENDANCE

Attendance is **mandatory** and will be taken each day during the clinical practicum. Students will attend all practicum meetings, except in cases of reasonable extenuating circumstances. In cases of an emergency, students should contact their Clinical Coordinator and the MCC MLT Program Coordinator when unable to report to the clinical site.

**If Middlesex Community College is closed due to inclement weather the student will not report to the clinical site.** This/these days will be made up at the end of the scheduled practicum.

## STUDENT WORK POLICY

Medical laboratory technician students may **not** accept payment in any form for the time they are scheduled for clinical hours at the affiliate where those clinical hours are scheduled. Any service work by students in the clinical setting outside of regular academic hours is totally voluntarily on the part of the student and is noncompulsory in any way. Medical laboratory technician students are not expected to perform service work and are not allowed to take the place of qualified staff during any clinical rotation. **After demonstrating proficiency, students, with qualified supervision, may be permitted to perform procedures.** A clinical institution which employs a currently-enrolled MLT student as a laboratory assistant, or phlebotomist, will schedule the student for work during non-instructional hours.

## OVERALL PERFORMANCE EVALUATION

Each clinical practicum experience has unique outcomes and performance evaluation rubrics. Please review the course syllabus for the evaluation process.

## COMPETENCY-BASED ASSESSMENT, SKILLS MASTERY, AND PROGRESSION TO CLINICAL PRACTICUM

Competency assessment is used to determine that the student has the necessary knowledge and skills to perform a basic laboratory test accurately. Each competency assessment has a written set of specific criteria which must be performed, without error, to demonstrate that competency has been achieved. The student will be provided with the assessment criteria and will receive feedback from the instructor. Clinical competencies are weighted independently as they are part of the student's overall clinical practicum grade.

If the student is unable to satisfactorily meet the standards, he/she will be required to repeat assessment for a second time. Failure to meet the requirements will prohibit the student from participating in the associated clinical practicum.



## UNSUCCESSFUL PRACTICUM EXPERIENCE

If a student is unsuccessful during their clinical practicum experience, the student will be required to repeat the didactic/laboratory course associated with this practicum. The student must take this course when offered during the next academic year. If the student is again unsuccessful, they must withdraw from the Medical Laboratory Technology program at Middlesex Community College.

## STUDENT CONDUCT AT CLINICAL AFFILIATIONS

Medical Laboratory Technician students are expected to conduct themselves according to the following guidelines for ethical behavior:

1. Treat patients and colleagues with respect, care and thoughtfulness.
2. Perform any duties in an accurate, precise, timely and responsible manner.
3. Safeguard patient information as confidential, within the limits of the law.
4. Prudently use laboratory resources.
5. Advocate the delivery of quality laboratory services in a cost-effective manner.
6. Work within the boundaries of laws and regulations and strive to disclose illegal or improper behavior to the appropriate authorities.
7. Continue to study, apply, and advance medical laboratory knowledge and skills and share such knowledge and skills with colleagues, other members of the healthcare community and the public.

## ENTRY LEVEL COMPETENCIES

Upon graduation and initial employment, the medical laboratory technician should be able to demonstrate entry-level competencies in the areas of professional practice listed below:

- Collecting and processing biological specimens and other substances for analysis;
- Performing analytical tests on body fluids, cells, and other substances;
- Recognizing factors that affect procedures and results, and taking appropriate actions within determined limits when corrections are indicated;
- Performing preventive and corrective maintenance of equipment and instruments or referring to appropriate source for repairs;
- Applying principles of safety;
- Demonstrating professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and with the public;
- Recognizing the responsibilities of other laboratory and health care personnel and interacting with them with respect for their jobs and patient care;
- Applying basic scientific principles in learning new techniques and procedures;
- Relating laboratory findings to common disease processes;



- Establishing and maintain continuing education as a function of growth and maintenance of professional competence.

## ARTICULATION AGREEMENT

Middlesex Community College and UMASS Lowell have an articulation agreement instituted for any MLT graduate who would like to further their education in the field of laboratory science. This agreement would allow the graduate of MCC with an Associate in Science Degree: Medical Laboratory Technician Program to articulate to UML Bachelor of Science Clinical Laboratory and Nutritional Sciences Program and also be eligible to obtain a Master Degree in Clinical Laboratory Science upon completion of the required course of study.

## TEACH OUT PLAN

In the event that Middlesex Community College determines that the MLT Program will no longer be offered, the college's official policy to sunset a program would be followed. Any students actively enrolled in the program would be given the opportunity to complete the program before the program would be closed. NAACLS will be notified within 30 days of the decision to close the program.

In the unforeseen event that Middlesex Community College cannot physically fulfill the obligation to teach MLT courses on the existing Lowell Campus arrangement would be made to accommodate the students being able to continue in their courses until the situation is resolved. Students would be notified by email of the alternate arrangements. Possible arrangements could include teaching the didactic portion of the MLT courses online or on the Bedford campus. Arrangements would be made to either postpone required labs until safe to return to campus or the program coordinator would contact the UMass Lowell or local hospital affiliates in an effort to procure space and/or supplies as needed to fulfill the requirements.

In the event that a catastrophic event halts the operation of one or more of the program's clinical affiliates, steps will be taken to place students at other functioning clinical sites to finish the remainder of their training.



## **CHAPTER 6**

# **CERTIFICATION EXAMINATION**



## **AMERICAN SOCIETY FOR CLINICAL PATHOLOGY (ASCP)**

### **BOARD OF CERTIFICATION EXAMINATION**

Upon completion of the Medical Laboratory Technician Associate Degree Program, the graduate will be eligible to sit for the ASCP Board of Certification Examination.

A copy of the ASCP Board of Certification Handbook: U.S. Procedures for Examination & Certification will be given to the student during the fourth semester of the MLT program.

The faculty of the MLT program at Middlesex Community College will guide the student/graduate in preparing and registering for this national certification exam.

In the Appendix of this handbook, you will find the MLT (ASCP) Examination Content Guideline & Outline published by ASCP. Please frequent this document as you progress through the program, as it gives descriptions and exam content percentages of each subset introduced in each course discipline.



## MLT STUDENT HANDBOOK SIGNATURE PAGE

Please read each statement below. INITIAL each statement in the space indicated to signify your agreement to abide by the policies and procedures in this Handbook. Print, sign and date in the space below.

1. \_\_\_\_\_ I have read and agree to comply with the student policies and procedures as outlined in the MLT Student Handbook. Furthermore, I will agree to and will comply with the course requirements as listed in each course syllabus and student policies of the Medical Laboratory Technician Program.
2. \_\_\_\_\_ I understand that while performing my regularly assigned duties, I may be exposed to blood, body fluids, or tissues. I will use the appropriate personal protective equipment required when there is an inherent potential for mucous membrane or skin contact with blood, body fluids, or tissues, or a potential for spills or splashes of them. I understand that if I fail to use available personal protective equipment, I may be subject to disciplinary action.
3. \_\_\_\_\_ I have been informed regarding the inherent health/safety hazards in the health care field and release Middlesex Community College from any liability for such hazards.
4. \_\_\_\_\_ I agree to criminal background checks and agree to immediately notify the Dean of Nursing and Allied Health, Katherine Gehly, in writing of any subsequent changes in criminal history that occur after the original background check has been completed.
5. \_\_\_\_\_ I understand that I will be required to carry health insurance coverage while attending clinical training.
6. \_\_\_\_\_ By enrolling in a class with a clinical practicum, I acknowledge that Middlesex Community College may be required, as a condition of my participation at an affiliated clinical site, to send certain information regarding me to a clinical affiliate, in compliance with rules, policies, and protocols of the clinical affiliate. Such information may include my immunization records and other personal or educational information about me that is reasonably required by the clinical affiliate's standard rules, policies, and protocols that apply to its employees. I knowingly consent to such a requirement, and hereby authorize Middlesex Community College to send such personal and educational information as may be reasonably required to the clinical affiliate.

**Printed Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Signature:** \_\_\_\_\_



## APPENDIX





## **APPENDIX DOCUMENTS**

- MLT Academic Map
- Health Programs Health Requirements
- Middlesex Community College Withdrawal Policy
- Middlesex Community College GPA Update
- Middlesex Community College Tuition and Fee Rates- Fall 2018
- Active Shooter Event Quick Reference Guide
- Middlesex Community College Code of Conduct
- Middlesex Community College Honor Code
- Middlesex Community College Student Grievance Procedure
- Middlesex Community College Student Course Grade Appeal Checklist
- Middlesex Community College Grade Appeal Form
- MLT (ASCP) Examination Content Guideline and Outline (published by ASCP)