Medical Laboratory Technology

Medical Laboratory Technology (MLT)

A medical laboratory technician (MLT) uses laboratory skills, computers, technology, and knowledge of pathology to provide information needed by the physician to diagnose, treat, and prevent disease. In clinical chemistry, for example, the MLT determines enzyme levels to diagnose a heart attack, glucose levels to monitor diabetes, and cholesterol levels to prevent heart disease. In hematology, the MLT studies blood cells to diagnose anemia and leukemia. In immunohematology, the MLT prepares blood for transfusions. In the microbiology department, the organism causing an infection is identified and antimicrobials for treatment are determined.

Medical Laboratory Technology (MLT)

All degree-seeking students must complete a First Year Experience (FYE) course as part of the first 12 credit hours taken at Cincinnati State.

Program Prerequisites: CHE 110 Fundamentals of Chemistry and MAT 150 Intermediate Algebra.

Semester 1		**Lec**	**Lab**	**Credits**
MLT 100	Introduction to Medical Laboratory Analysis			5
ENG 101	English Composition 1			3
CHE 111	Bio-Organic Chemistry			4
MLT 121	Hematology and Hemostasis 1			4
BIO 151	Anatomy and Physiology 1			4
Semester 2				
MLT 122	Hematology and Hemostasis 2			3
ENG 102	English Composition 2: Contemporary Issues			3
MLT 170	Instrumentation for Medical Laboratory Technicians			1
MLT 140	Clinical Chemistry			3
MLT 180	Phlebotomy Techniques and Practice for Medical Laboratory Technicians			2
BIO 152	Anatomy and Physiology 2			4
Semester 3				
MLT 185	Clinical Laboratory Practice			6
Semester 4				
MLT 210	Clinical Immunology and Serology			3
MLT 250	Immunohematology			5
PSY 110	Introduction to Psychology			3
COMM 105	Interpersonal Communication			3
MLT 191	Part-Time Cooperative Education 1: Medical Laboratory Technology			1
Semester 5				
MLT 192	Part-Time Cooperative Education 2: Medical Laboratory Technology			1
XXX XXX Humanities/Social Sciences Elective				3
MLT 260	Clinical Microbiology			6
MLT 270	Medical Laboratory Seminar			1

BIO 240	Pathophysiology			3
Total Credits:		0	0	71

Electives

Humanities/Social Sciences Elective

Any ART, CULT, ECO, GEO, HST, LBR, LIT, MUS, PHI, POL, SOC	3

Courses

MLT 100 Introduction to Medical Laboratory Analysis
5 Credits. 3 Lecture Hours. 6 Lab Hours.
A course on equipment and processes of the clinical laboratory and the responsibilities of the medical laboratory technician. Topics include pipetting; spectrophotometry; safety; point of care testing; and the chemical, physical and microscopic analysis of urine.
Prerequisites: MAT 150 and MLT Program Chair consent

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=100subject_code=MLT)

MLT 121 Hematology and Hemostasis 1
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course on theory and practice of normal hematology and hemostasis. Topics include: hematopoiesis, cell and platelet counts, cell identification, and prothrombin and partial prothrombin times.
Prerequisites: MAT 150 or appropriate placement test score and MLT Program Chair consent

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MLT 122 Hematology and Hemostasis 2
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A continuation of MLT 121. Topics include: hematopoiesis and abnormal cell identification, red cell abnormalities, anemias, leukemias, and coagulopathies.
Prerequisites: MLT 121

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=122subject_code=MLT)

MLT 140 Clinical Chemistry
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on principles and procedures used in the chemical analysis of clinical specimens. Topics include: manual and automated chemical testing, quality control, and clinical correlations.
Prerequisites: MLT 100 and MLT 121

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=140subject_code=MLT)

MLT 170 Instrumentation for Medical Laboratory Technicians
1 Credit. 0 Lecture Hour. 3 Lab Hours.
A course on principles and procedures for instrumentation used in hematology, hemostasis, urinalysis and clinical chemistry. Topics include: set-up, operation, routine maintenance and quality control procedures for spectrophotometers, particle counters, electrodes, and other automated analyzers.
Prerequisites: MLT 100 and MLT 121

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MLT 180 Phlebotomy Techniques and Practice for Medical Laboratory Technicians
2 Credits. 0 Lecture Hour. 6 Lab Hours.
A course on theory and practice of blood collection used by medical laboratory technicians. Topics include: devices and methods, specimen integrity, communication, and professionalism. Students who develop the necessary skills also practice supervised blood collection at a clinical site.
Prerequisites: MLT 100 and MLT 121

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=180subject_code=MLT)

MLT 185 Clinical Laboratory Practice
6 Credits. 0 Lecture Hour. 30 Lab Hours.
Students apply skills in clinical chemistry, hematology, hemostasis, and urinalysis through on-campus laboratory practice. Students who develop the necessary skills also participate in an internship in these departments at a clinical site.
Prerequisites: MLT 140 and MLT 180

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=185subject_code=MLT)

MLT 191 Part-Time Cooperative Education 1: Medical Laboratory Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their first part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures in order to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: MLT 185 (minimum grade C)

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=191subject_code=MLT)

MLT 192 Part-Time Cooperative Education 2: Medical Laboratory Technology
1 Credit. 1 Lecture Hour. 20 Lab Hours.
Students seeking an associate's degree participate in their second part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures in order to earn credit. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: MLT 191 (minimum grade C)

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=192subject_code=MLT)

MLT 198 First Year Special Topics in Medical Laboratory Technology
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A course on selected topics related to Medical Laboratory Technology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.
Prerequisites: None

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=198subject_code=MLT)

MLT 199 First Year Independent Project in Medical Laboratory Technology
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A project related to Medical Laboratory Technology that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Medical Laboratory Technology faculty. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: Vary by section

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=199subject_code=MLT)

MLT 210 Clinical Immunology and Serology
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on the function of the immune system, and immunological and serological testing methods performed in clinical laboratories. Topics include: humoral and cell mediated immunity, hypersensitivity, infectious agents, enzyme immunoassay, immunoelectrophoresis, and basic molecular testing.
Prerequisites: MLT 185

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=210subject_code=MLT)

MLT 250 Immunohematology
5 Credits. 3 Lecture Hours. 6 Lab Hours.
A course on theory and application of immunohematology procedures used in the clinical laboratory. Topics include: ABO and Rh, antibody screens and antibody identification, compatibility, enhancement techniques, and automated procedures.
Prerequisites: MLT 185

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MLT 260 Clinical Microbiology
6 Credits. 3 Lecture Hours. 9 Lab Hours.
A course on theory and application of procedures for clinical microbiology. Topics include: identification, antimicrobial susceptibility and clinical significance of bacteria; basic mycobacteriology; mycology; parasitology; and virology.
Prerequisites: MLT 250

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=260subject_code=MLT)

MLT 270 Medical Laboratory Seminar
1 Credit. 0 Lecture Hour. 3 Lab Hours.
Students review theories and procedures of medical laboratory technology to prepare for the certification exam. Topics include: laboratory operations, hematology, hemostasis, clinical chemistry, immunology, immunohematology, clinical microbiology, and test-taking strategies.
Prerequisites: MLT 210 and MLT 250 (minimum grade C for both)

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=270subject_code=MLT)

MLT 298 Second Year Special Topics in Medical Laboratory Technology
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A course on selected topics related to Medical Laboratory Technology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.
Prerequisites: None

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=298subject_code=MLT)

MLT 299 Second Year Independent Project in Medical Laboratory Technology
1-9 Credits. 0 Lecture Hour. 0 Lab Hour.
A project related to Medical Laboratory Technology that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Medical Laboratory Technology faculty. Grades issued are Satisfactory or Unsatisfactory.
Prerequisites: Vary by section

View Sections (http://webapps.cincinnatistate.edu/wwwTools/MCL/default.aspx?course_number=299subject_code=MLT)