

ASSOCIATE OF APPLIED SCIENCE IN MEDICAL LABORATORY TECHNICIAN

Medical Laboratory Programs

Laboratory analysis plays an important role in the detection, diagnosis, and treatment of many diseases. Laboratory professionals perform a myriad of such tests to aid the physician in the management of disease.

For more information regarding program policies, procedures, and essential functions or to obtain a copy of the Medical Laboratory program handbook, please contact Joan O'Connell-Spalla at 330-941-1761 or joconnellspalla@ysu.edu.

Medical Laboratory Technician (MLT-AAS) Curriculum

The medical laboratory technician program is a two-year program leading to the Associate of Applied Science degree. The curriculum focuses on the knowledge and basic skills necessary to understand and master the procedures performed in the medical laboratory. Included are the principles, methods, calculations, and interpretation of laboratory procedures, computer technology, and communication and interpersonal skills. Technical instruction includes procedures in hematology, microbiology, immunohematology, clinical chemistry, and body fluids. This program requires five semesters of study including one summer semester.

Medical laboratory technicians (MLT) work in a supportive role in a hospital laboratory, private laboratory, clinic, public health facility, or pharmaceutical laboratory. The MLT performs laboratory tests under the supervision or direction of pathologists and other physicians, and clinical laboratory scientists. Physicians and other health care professionals use these tests to determine the presence and extent of disease, the etiologic implications about the cause of disease, and to monitor the treatment of the disease.

The MLT collects samples from patients and develops data on the blood, tissues and body fluids by using a variety of precise methodologies and technologies. Medical laboratory technicians use modern instruments, with the ability to discriminate between similar items and correct errors using preset strategies. The MLT has knowledge of specific techniques and instrumentation and is able to recognize factors that affect laboratory procedures. The MLT also monitors quality assurance procedures.

The MLT program is accredited through the National Accrediting Agency for Clinical Laboratory Sciences and meets the standards developed by the American Society of Clinical Pathologists (ASCP).

The National Accrediting Agency for Clinical Laboratory Sciences
5600 N. River Rd., Suite 720
Rosemont, IL 60018-5119
phone (773) 714-8886
<http://www.naacls.org>

Over the past three program years, the MLT program has a 94.0% graduation rate and a 100% placement rate. Approximately 81% of those graduates who took the ASCP-MLT certification examination passed within one year of graduation from the program.

Graduates are eligible to take the certification examinations for MLT/CLT offered through ASCP and become certified as an MLT (ASCP).

Students must have a minimal Math Placement of Level 3 or its equivalent to be considered for the MLT program. Students in Pre-MLT are not considered

to be enrolled in the MLT program. Students must first complete the following courses with a minimal grade of C:

COURSE	TITLE	S.H.
MLT 1501	Introduction to the Medical Laboratory Profession	2
MLT 1501L	Introduction to the Medical Laboratory Profession Laboratory	1
BIOL 2601	General Biology: Molecules and Cells	4
BIOL 2601L	General Biology: Molecules and Cells Laboratory	0
Total Semester Hours		7

Program admission is based on the applicant's overall GPA and performance in Chemistry, MLT, and Biology courses. All MLT, BIOL, & CHEM courses must be completed with a minimum grade of a "C". Students must maintain an overall program GPA of at least 2.75. Students receiving a total of 6 hours or more grades of "D"/ "F" in MLT, BIOL, or CHEM will be dismissed from the program. All developmental courses such as the following do not count toward degree requirements.

COURSE	TITLE	S.H.
ENGL 1539	Fundamentals of College Writing	4
ENGL 1540	Introduction to College Writing	3
RSS 1510A	Advanced College Success Skills	3
RSS 1510B	Basic College Success Skills	3
MATH 1501		
MATH 1505	Intermediate Algebra with Applications	5
MATH 1507	Intermediate Algebra	3

There will be no course substitutions for MLT, BIOL, or CHEM courses. Students are permitted a total of two course repetitions for recalculation of GPA. Readmission to the program is based on GPA and availability of class space. Students must maintain a minimum of 2.75 GPA for placement into clinical practicum. Courses must be taken in proper sequence; students may invalidate clinical placement when failing to do so. Students are required to complete a physical exam, background check, and immunizations as program requirements.

Medical laboratory technicians are expected to function with a maximum degree of effectiveness in professional attitude, patient relations, and integrity. The capacity for competent performance at all levels must be assured before the student will be assigned to a clinical internship. The student must be competent in the didactic (knowledge), psychomotor (laboratory skills), and affective realm (attitude and responsibility) prior to clinical placement.

COURSE	TITLE	S.H.
University Requirements		
General Education		
ENGL 1550	Writing 1	3-4
	or ENGL 1549	Writing 1 with Support
ENGL 1551	Writing 2	3
STAT 2625	Stat Lit and Crit Reasoning	4
HAHS 1500	Introduction to the Bitonte College of Health and Human Services (First Year Experience)	2
Select 2 courses from 2 domains: Natural Sciences (one must include a lab), Social Science, A&H		6
Science Requirements		
BIOL 2601 & 2601L	General Biology: Molecules and Cells and General Biology: Molecules and Cells Laboratory	4
BIOL 2602 & 2602L	General Biology: Organisms and Ecology and General Biology: Organisms and Ecology Laboratory	4
CHEM 1515 & 1515L	General Chemistry 1 and General Chemistry 1 Laboratory	4

Major Requirements		
MLT 1501	Introduction to the Medical Laboratory Profession	2
MLT 1501L	Introduction to the Medical Laboratory Profession Laboratory	1
MLT 1502	Urinalysis and Body Fluids	2
MLT 1502L	Urinalysis and Body Fluids Laboratory	1
MLT 1503	Immunohematology	3
MLT 1503L	Immunohematology Laboratory	1
MLT 2601	Clinical Chemistry 1	
MLT 2601L	Clinical Chemistry 1 Laboratory	1
MLT 2603	Topics in Medical Laboratory Technology	4
MLT 3700	Clinical Chemistry 2	3
MLT 3700L	Clinical Chemistry 2 Laboratory	1
MLT 3701	Clinical Hematology 1	3
MLT 3701L	Clinical Hematology 1 Laboratory	0
MLT 3702	Clinical Hematology 2	3
MLT 3702L	Clinical Hematology 2 Laboratory	0
MLT 3703L	Clinical Immunology Laboratory	1
MLT 3787	Diagnostic Microbiology	3
MLT 3787L	Diagnostic Microbiology Laboratory	2
MLT 3706	Medical Laboratory Seminar	2
MLT 3710	Interpretation of Clinical Laboratory Results	1
MLT 3716	Clinical Internship	8
Total Semester Hours		72-73

Year 1

Fall			S.H.
MLT 1501 & 1501L	Introduction to the Medical Laboratory Profession and Introduction to the Medical Laboratory Profession Laboratory	3	
CHEM 1515 & 1515L	General Chemistry 1 and General Chemistry 1 Laboratory	4	
BIOL 2601 & 2601L	General Biology: Molecules and Cells and General Biology: Molecules and Cells Laboratory	4	
ENGL 1550	Writing 1	3	
HAHS 1500	Introduction to the Bitonte College of Health and Human Services	2	
General Education Requirement ¹		3	
Semester Hours		19	

Spring

MLT 1502 & 1502L	Urinalysis and Body Fluids and Urinalysis and Body Fluids Laboratory	3
MLT 1503 & 1503L	Immunohematology and Immunohematology Laboratory	4
MLT 2601 & 2601L	Clinical Chemistry 1 and Clinical Chemistry 1 Laboratory	3
BIOL 2602 & 2602L	General Biology: Organisms and Ecology and General Biology: Organisms and Ecology Laboratory	4
ENGL 1551	Writing 2	3
Semester Hours		17

Summer

MLT 3700 & 3700L	Clinical Chemistry 2 and Clinical Chemistry 2 Laboratory	4
MLT 3701 & 3701L	Clinical Hematology 1 and Clinical Hematology 1 Laboratory	3
Semester Hours		7

Year 2**Fall**

MLT 2603	Topics in Medical Laboratory Technology	4
MLT 3702 & 3702L	Clinical Hematology 2 and Clinical Hematology 2 Laboratory	3
MLT 3703L	Clinical Immunology Laboratory	1
MLT 3787 & 3787L	Diagnostic Microbiology and Diagnostic Microbiology Laboratory	5
STAT 2625	Stat Lit and Crit Reasoning	4
Semester Hours		17

Spring

MLT 3706	Medical Laboratory Seminar	2
MLT 3710	Interpretation of Clinical Laboratory Results	1
MLT 3716	Clinical Internship	8
General Education Requirement		3
Semester Hours		14
Total Semester Hours		74

¹ General education courses must fulfill their requirements for the baccalaureate degree. Students must take two courses from Arts & Humanities, two courses from Social Science, and two courses from Social and Personal Awareness.

Only those students who complete MLT 1501 Introduction to the Medical Laboratory Profession / MLT 1501L Introduction to the Medical Laboratory Profession Laboratory and BIOL 2601 General Biology: Molecules and Cells / BIOL 2601L General Biology: Molecules and Cells Laboratory with a grade of C or better will be considered for admission into the MLT Program.

Learning Outcomes

- Graduates will be prepared to function as entry-level health care professionals in the medical laboratory as medical laboratory technicians and medical laboratory scientists. At entry level, the medical laboratory graduate will be able to demonstrate the ability to comprehend, apply and evaluate information relative to the medical laboratory profession.
- These learning outcomes include comprehension of the theory and the ability to apply and evaluate the didactics of hematology, clinical chemistry, immunohematology, microbiology, immunology, coagulation, molecular diagnostics, and other emerging diagnostics.
- Graduates will be prepared to function as entry-level health care professionals in the medical laboratory as medical laboratory technicians and medical laboratory scientists. Upon completion of the program, graduates will demonstrate technical proficiency in laboratory applications.
- These psychomotor learning outcomes include the performance of laboratory procedures in hematology, clinical chemistry, immunohematology, microbiology, immunology, coagulation, molecular diagnostics, and other emerging diagnostics. The graduate will demonstrate proficiency in the functions of all phases of laboratory analysis (pre-analytical, analytical, and post-analytical processes).
- Graduates will demonstrate professional conduct and interpersonal communication skills consistent with the medical laboratory profession.
- Students will exhibit the ability to think critically across all 3700-level courses through the application of fundamental didactic and psychomotor skills to assess the medical relevance and significance of specific aspects of laboratory testing.