BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCE ADVANCED PLACEMENT OPTION

Medical Laboratory Programs

Laboratory analysis plays a vital role in the detection, diagnosis, and treatment of disease. Laboratory professionals perform moderate to highly complex analysis and provide data to assist physicians and other healthcare practitioners in identification and treatment of disease.

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Medical laboratory scientists perform diagnostic tests to assist in the prevention, identification, and treatment of disease. The curriculum provides in-depth knowledge of testing principles and methodologies, quality control, test validation, result verification and disease correlation. Medical laboratory scientists may be employed in clinics, hospitals, public health facilities, and industry.

Medical Laboratory Scientists may act in leadership roles as supervisors, technical consultants, and laboratory directors. In addition to traditional laboratory careers, there are opportunities in education, research, and industry. The undergraduate academic coursework and diverse clinical experience provides the MLS with a solid foundation for post-graduate programs in medicine, clinical chemistry, and biology.

Advanced Placement Option -Medical Laboratory Science On-line Completion Program

The Advanced Placement Option in the Medical Laboratory Science program provides a pathway for certified Medical Laboratory Technicians (MLT) to become Medical Laboratory Scientists (MLS). The program is designed to meet the needs of the working medical laboratory technician Major courses are offered fully online to provide the opportunity for working MLT's to remain employed while completing the Bachelor of Science in MLS degree.

Applicants must meet the following criteria for acceptance into the program:

- Graduated from a NAACLS accredited MLT/CLT program.
- Completed prerequisite course work in biology, chemistry, and mathematics and meet Biology and Chemistry guidelines for eligibility for the ASCP MLS Certification examination.
- Certified as an MLT(ASCP)
- Employed in an accredited laboratory that can provide training in all required MLS disciplines.

Students may transfer courses from approved institutions with prior approval from the program director or department chairperson. Students must complete a minimum of thirty semester hours of coursework at Youngstown State University to earn the Bachelor of Science degree in Medical Laboratory Science.

General education, chemistry, and biology transfer credits may be applied toward the BSMLS degree and are evaluated by the program director upon admission to YSU.

Students may be granted experiential credit for required clinical competency. Experiential credit may be granted following submission of required competency check lists and review by the program director.

Students who require clinical training to meet competency must submit a statement of support and employer support for initiation of an affiliation agreement with YSU if one does not currently exist.

Transfer credits cannot be applied to MLS 4800 level advanced lecture coursework.

The MLS Advanced Placement Option is accredited through the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS: 5600 N. River Rd. Suite 720 Rosemont, IL 60018-5119, Phone: 773.714.8880, www.naacls.org, info@naacls.org

COURSE	TITLE	S.H.
General Education transfer hours and block credit		**15**
Course requirements will vary dependent on applicable transfer credit		
5 Courses include: Writing 1, 2 Natural Science, 1 Social Science, and 1 additional Social Science, Arts and Humanities or General Education Elective		
GENERAL EDUCATION COMPLETION		
Additional transfer credit may be applied to Gen Ed requirements		
ENGL 1551	Writing 2	3
Social Sciences (0-1 Courses* Selection depends on block credit)		0-3
Arts & Humanities (1-2 Courses)		3-6
STAT 2625	Statistical Literacy and Critical Reasoning	4
General Education Electives (9 s.h.)		**0**
General education electives are met with courses in the major		
BSMLS Science Requirements (transfer credits may be applied to meet BIO and Chem requirements)		
Biology Courses (or equivalents) 16 sh must include A&P and Micro		
BIOL 2601	General Biology 1: Molecules and Cells	3
BIOL 2601L	General Biology I: Molecules and Cells Laboratory	1
BIOL 3702	Microbiology	3
BIOL 3702L	Microbiology Laboratory	1
BIOL 1545	Allied Health Anatomy and Physiology	5
BIOL 1545L	Allied Health Anatomy and Physiology Laboratory	0
MLS 3704	Clinical Immunology and Serology	3
MLS 3704L	Clinical Immunology and Serology	1
Chemistry courses 15sh (or equivalents) must include Organic, Biochemistry or Equiv.		
CHEM 1515	General Chemistry 1	3
CHEM 1515L	General Chemistry 1 Laboratory	1
CHEM 1516	General Chemistry 2	3
CHEM 1516L	General Chemistry 2 Laboratory	1
CHEM 1520	Allied Health Chemistry for Online Programs	3
CHEM 3719	Organic Chemistry 1	3
CHEM 3719L	Organic Chemistry 1 Laboratory	1
MLS REQUIRED COURSES -Advanced Placement Online Completion 37 sh **Experiential competency credit may be applied to Lab courses only**		
MLS 2605	Molecular Diagnostics	2
MLS 4807	Advanced Clinical Chemistry	4
MLS 4807L	Advanced Clinical Chemistry Lab Competency	2
MLS 4808	Advanced Hematology	4
MLS 4808L	Advanced Hematology Clinical Competency	2
MLS 4809	Advanced Immunohematology	4
MLS 4809L	Advanced Immunohematology Clinical Competency	2
MLS 4810	Advanced Diagnostic Microbiology	5
MLS 4810L	Advanced Microbiology Competency	3

MLS 4811	Advanced Immunology and Urinalysis	4
MLS 4811L	Adv Immuno/Sero, Urinalysis, and Molecular Competency	2
MLS 4812	Advanced Laboratory Operations	2
MLS 4813	Advanced Placement Seminar	1
Transfer credits from Associates Degree		**26**
Total Semester Hours		**120-126**

Year 3		
Fall		**S.H.**
PROGRAM COURSES ARE OFFERED ONCE PER YEAR		
Curriculum is in addition to university and program requirements for award of the Bachelor of Science degree in MLS		
MLS 4807	Advanced Clinical Chemistry	4
MLS 4807L	Advanced Clinical Chemistry Lab Competency	2.0
MLS 4812	Advanced Laboratory Operations	2
	Semester Hours	**8**
Spring		
MLS 4810	Advanced Diagnostic Microbiology	5
MLS 4810L	Advanced Microbiology Competency	3
MLS 4811	Advanced Immunology and Urinalysis	4
MLS 4811L	Adv Immuno/Sero, Urinalysis, and Molecular Competency	2
MLS 2605	Molecular Diagnostics	2
	Semester Hours	**16**
Year 4		
Fall		
MLS 4809	Advanced Immunohematology	4
MLS 4809L	Advanced Immunohematology Clinical Competency	2.0
	Semester Hours	**6**
Spring		
MLS 4808	Advanced Hematology	4
MLS 4808L	Advanced Hematology Clinical Competency	2.0
MLS 4813	Advanced Placement Seminar (Must be taken during the last semester of the program)	1
	Semester Hours	**7**
	Total Semester Hours	**37**

[1] General education courses must fulfill the requirements for the baccalaureate degree.

[2] Curriculum for years one and two includes coursework required for award of the Bachelor of Science degree. Student transcripts will be evaluated for applicable transfer credit. Student must have earned the Associate degree in Medical Laboratory Technology from an accredited program and successfully completed the ASCP certification exam.

[3] Students must have 16 sh of Biology including Microbiology and Anatomy - Transfer credits may apply

[4] Students must have 16sh of Chemistry including an Organic or Biochemistry component - Transfer credits may apply

[5] Students must complete a minimum 120 semester hours to earn the BSMLS degree, 30 semester hours of course credit must be earned at YSU.

Learning Outcomes

The student learning outcomes for the medical laboratory programs (MLS-BS and MLT-AAS) are as follows:

- 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.