Bachelor of Science in Medical

Laboratory Science

Medical Laboratory Science (BSMLS)

Bachelor of Science in Medical Laboratory Science

http://www.odu.edu/mdts/medical-laboratory-science (http://www.odu.edu/mdts/medical-laboratory-science/)

Program Director:
Rachel Childs, DHSc, MS, MLS(ASCP)CM
Ellmer College of Health Sciences
4608 Hampton Blvd, Rm 2009
Phone: 757-683-3016
E-mail: rchilds@odu.edu

The medical laboratory scientist plays a vital role in the diagnosis and treatment of disease by performing clinical laboratory tests on patients' blood, body fluids, and other specimens. This includes clinical tests within the areas of chemistry, microbiology, hematology, immunology/serology, urinalysis, immunohematology (blood banking), and molecular pathology.

The program has been continually accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 5600 N River Road, Suite 720, Rosemont, IL 60018, 773 714-8880. Due to accreditation, upon successful completion of the program graduates are eligible to take the national certification exam for Medical Laboratory Scientist, administered by the American Society for Clinical Pathology, MLS(ASCP).

Admission

Admission to the University does not constitute admission to the medical laboratory science program. Students are admitted to the program after completion of two years of college study, which includes all program prerequisite courses. All program prerequisite courses must be completed with a grade of C (2.00) or better. Additionally, applicants must be in good academic standing (cumulative GPA 2.0 or greater). The students then enter two years of a combined didactic and clinical phase congruent with the 2 + 2 concept. A grade of C (2.00) or better is required in all medical laboratory science course work for continuance in the program. The program does not offer just the final clinical phase to transfer applicants from 3 + 1 programs. Applications to the program, including all materials, must be submitted no later than February 1 for consideration for admission the following fall. Exemptions may be appealed only through the program director. Prospective students who fail to meet the February 1 deadline for formal admission may be allowed to take on-campus medical laboratory science/medical technology courses on a space-available basis. Permission must be first granted by the program director in advance of registration.

Requirements

Lower-Division General Education

Written Communication (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#written)	6
Oral Communication (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#oral)	3
Mathematics (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#math)	3
Language and Culture (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#language)	0-6
Information Literacy and Research (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#information)	3
Human Behavior (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#behavior)	3
Human Creativity (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#creativity)	3
Interpreting the Past (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#interpret)	3
Literature (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#literature)	3
Philosophy and Ethics (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#philosophy)	3
The Nature of Science (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#nature)	8
Impact of Technology (https://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#impact)	3

Written Communication: grade of C or better required in both courses

Mathematics: satisfied through departmental requirements

Nature of Science: satisfied through departmental requirements

Oral Communication: satisfied through major course requirements

Philosophy and Ethics: PHIL 345E Bioethics preferred; 300/400 level P or E course meets upper-division general education/Option D

Impact of Technology: 300/400 level preferred; any 300/400 level T course EXCEPT DNTH 440T meets upper-division general education/Option D

Upper-Division General Education

- Option A: Approved Disciplinary Minor, 12 hours minimum; also second degree or second major.
- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C: An approved Certification Program such as teaching licensure
- Option D: Two Upper-Division courses from outside the College of Health Sciences and not required by the major (6 hours)

Requirements for Graduation

Requirements for graduation include the following:

- Minimum of 121 credit hours.
- Minimum of 31 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken toward the major.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken toward a minor.
- Completion of ENGL 110C, ENGL 211C, or ENGL 231C, and the writing intensive (W) course in the major with a grade of C or better. The W course must be taken at Old Dominion University.
- Completion of Senior Assessment.

Departmental Requirements

Students must complete the following courses with a C or better prior to entering the Medical Laboratory Science program:

STAT 130M	Elementary Statistics	3
MATH 102M	College Algebra	3
or MATH 103M	College Algebra with Supplemental Instruction	
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	4
CHEM 121N & CHEM 122N	Foundations of Chemistry I Lecture and Foundations of Chemistry I Laboratory	4
CHEM 123N & CHEM 124N	Foundations of Chemistry II Lecture and Foundations of Chemistry II Laboratory	4

CHEM 211 & CHEM 212	Organic Chemistry I Lecture and Organic Chemistry I Laboratory	5
BIOL 250	Human Anatomy and Physiology I	4
BIOL 251	Human Anatomy and Physiology II	4
Total Credit Hours		**31**

Medical Laboratory Science Major

General Education	
Complete lower-division requirements	27-33
Complete upper-division requirements	0-6
Departmental Requirements	
Complete departmental requirements	31
Medical Laboratory Science	
See requirements below	63
Total Credit Hours	**121-133**

Course	Title	Credit Hours
Third Year		
Fall		
MLS 210	Orientation to Medical Laboratory Science	1
MLS 307	Clinical Methods in Microbiology	1
MLS 308	Clinical Microbiology	2
MLS 311	Hematology	3
MLS 312	Hematology Laboratory	1
MLS 324	Clinical Chemistry I	3
MLS 325	Clinical Chemistry I Methods	1
MLS 330	Clinical Immunology/Serology	2
MLS 331	Clinical Immunology/Serology Laboratory	1
	Credit Hours	**15**
Spring		
MLS 309	Medical Bacteriology	3
MLS 319	Medical Bacteriology Methods	2
MLS 310	Urinalysis and Body Fluids	1
MLS 313	Diagnostic Methods in Urinalysis	1
MLS 326	Immunohematology	3
MLS 336	Immunohematology Laboratory	1
MLS 328	Advanced Hematology and Hemostasis	2
MLS 339	Medical Parasitology and Mycology Laboratory	1
MLS 340	Medical Parasitology, Mycology, and Virology	1
MLS 351	Clinical Chemistry II	3
	Credit Hours	**18**
Summer		
MLS 420	Blood Collection Techniques	2
MLS 454	Clinical Blood Bank Practicum	4
	Credit Hours	**6**
Fourth Year		
Fall		
MLS 440	Statistical Applications and Data Analysis in the Clinical Laboratory	3
MLS 406	Clinical Microbiology Practicum	5
MDTS 401	Molecular Diagnostics Laboratory	3
Clinical Practica 4-5 credits from fourth year spring semester or elective		
	Credit Hours	**11**
Spring		
MLS 404	Clinical Hematology Practicum	4
MLS 452	Clinical Biochemistry Practicum	5
MLS 403W	Management in the Clinical Setting	3
MLS 457	Medical Laboratory Science Seminar	1
Clinical Practica 4-5 credits from fourth year spring semester or elective		
	Credit Hours	**13**
	Total Credit Hours	**63**

Notes: Junior year core courses that are over three years old prior to starting a rotation (practicum course) must be reevaluated by the faculty member at ODU in charge of the specialty, in both theoretical knowledge and technical skills. Reevaluation may result in the need to repeat and/or audit out-of-date courses. This applies to both part-time and returning students.

Following the completion of MLS 420 Blood Collection Techniques, a 2-credit optional, limited enrollment Phlebotomy Internship, MLS 468 is available. Successful completion of both: MLS 420 and MLS 468 satisfies the requirements for Phlebotomy Certification from the American Society for Clinical Pathology, PBT(ASCP). Both classes are also available at graduate level as MLS 520 and MLS 568. Graduate students interested in these classes must contact the MLS Program Director for permission to enroll.

Degree Program Guide

The Degree Program Guide is a suggested curriculum to complete this degree program in four years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

Course	Title	Credit Hours
Freshman		
Fall		
ENGL 110C	English Composition	3
MATH 102M or MATH 103M	College Algebra or College Algebra with Supplemental Instruction	3
BIOL 121N	General Biology I	3
BIOL 122N	General Biology I Lab	1
Human Creativity		3
CHEM 103 may be needed as prerequisite to CHEM 121N (3 credits)		
	Credit Hours	**13**

Spring		
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research or Writing, Rhetoric, and Research: Special Topics	3
CHEM 121N	Foundations of Chemistry I Lecture	3
CHEM 122N	Foundations of Chemistry I Laboratory	1
STAT 130M	Elementary Statistics	3
Interpreting the Past		3
Information Literacy		3
	Credit Hours	**16**
Sophomore		
Fall		
MLS 210	Orientation to Medical Laboratory Science	1
CHEM 123N	Foundations of Chemistry II Lecture	3
CHEM 124N	Foundations of Chemistry II Laboratory	1
BIOL 250	Human Anatomy and Physiology I	4
Literature		3
Human Behavior		3
	Credit Hours	**15**
Spring		
BIOL 251	Human Anatomy and Physiology II	4
CHEM 211	Organic Chemistry I Lecture	3
CHEM 212	Organic Chemistry I Laboratory	2
Impact of Technology (Option D 300/400)		3
Philosophy and Ethics (Option D 300/400)		3
	Credit Hours	**15**
Junior		
Fall		
MLS 307	Clinical Methods in Microbiology	1
MLS 308	Clinical Microbiology	2
MLS 311	Hematology	3
MLS 312	Hematology Laboratory	1
MLS 324	Clinical Chemistry I	3
MLS 325	Clinical Chemistry I Methods	1
MLS 330	Clinical Immunology/Serology	2
MLS 331	Clinical Immunology/Serology Laboratory	1
	Credit Hours	**14**
Spring		
MLS 309	Medical Bacteriology	3
MLS 319	Medical Bacteriology Methods	2
MLS 310	Urinalysis and Body Fluids	1
MLS 313	Diagnostic Methods in Urinalysis	1
MLS 326	Immunohematology	3
MLS 336	Immunohematology Laboratory	1
MLS 328	Advanced Hematology and Hemostasis	2
MLS 340	Medical Parasitology, Mycology, and Virology	1
MLS 339	Medical Parasitology and Mycology Laboratory	1
MLS 351	Clinical Chemistry II	3
	Credit Hours	**18**
Summer		
MLS 420	Blood Collection Techniques	2
MLS 454	Clinical Blood Bank Practicum	4
	Credit Hours	**6**
Senior		
Fall		
MLS 440	Statistical Applications and Data Analysis in the Clinical Laboratory	3
MLS 406	Clinical Microbiology Practicum	5
MDTS 401	Molecular Diagnostics Laboratory	3
	Credit Hours	**11**
Spring		
MLS 404	Clinical Hematology Practicum	4
MLS 452	Clinical Biochemistry Practicum	5
MLS 457	Medical Laboratory Science Seminar	1
MLS 403W	Management in the Clinical Setting	3
	Credit Hours	**13**
	Total Credit Hours	**121**