

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:

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The medical laboratory scientist/medical technologist 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/medical technology 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 (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#written)	6
Oral Communication (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#oral)	3
Mathematics (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#math)	3
Language and Culture (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#language)	0-6
Information Literacy and Research (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#information)	3

Human Behavior (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#behavior)	3
Human Creativity (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#creativity)	3
Interpreting the Past (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#interpret)	3
Literature (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#literature)	3
Philosophy and Ethics (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#philosophy)	3
The Nature of Science (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#nature)	8
Impact of Technology (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#impact)	3

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

Oral Communication: satisfied through major course requirements

Mathematics: STAT 130M and MATH 102M or MATH 103M grade of C or better required

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

Nature of Science: BIOL 121N and BIOL 122N, CHEM 121N and CHEM 122N, and CHEM 123N and CHEM 124N; grade of C or better required

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 120 credit hours.
- Minimum of 30 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

BIOL 250 & BIOL 251	Human Anatomy and Physiology I and Human Anatomy and Physiology II	8
CHEM 211 & CHEM 212	Organic Chemistry I Lecture and Organic Chemistry I Laboratory	5

Total Credit Hours **13**

Students must complete the following courses with a C or better prior to entering the Medical Laboratory Science/Medical Technology program: BIOL 121N and BIOL 122N, BIOL 250 and BIOL 251, CHEM 121N and

CHEM 122N, CHEM 123N and CHEM 124N, CHEM 211 and CHEM 212 and STAT 130M.

Medical Laboratory Science Major

General Education

Complete lower-division requirements	45-51
Complete upper-division requirements	0-6

Departmental Requirements

Complete departmental requirements	13
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Medical Laboratory Science

See requirements below	63
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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 Instrumentation	3
MLS 325	Clinical Instrumentation Methods	1
MLS 330	Clinical Immunology/Serology	2
MLS 331	Clinical Immunology/Serology Laboratory	1
MDTS 401	Molecular Diagnostics Laboratory	3
Credit Hours		18
Spring		
MLS 309	Medical Bacteriology	3
MLS 310	Urinalysis and Body Fluids	1
MLS 313	Diagnostic Methods in Urinalysis	1
MLS 319	Medical Bacteriology Methods	2
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 Biochemistry	3
Credit Hours		18
Summer		
MLS 320	Blood Collection Techniques	2
MLS 406	Clinical Microbiology Practicum	5
MLS 454	Clinical Blood Bank Practicum	4
Clinical Practica 4 to 5 credits from fourth year second term courses		
Credit Hours		11

Fourth Year

Fall

MLS 403W	Management in the Clinical Setting	3
MLS 440	Statistical Applications and Data Analysis in the Clinical Laboratory	3

4-10 credits from fourth year second term courses

Credit Hours 6

Spring

MLS 404	Clinical Hematology Practicum	4
MLS 452	Clinical Biochemistry Practicum	5
MLS 457	Medical Laboratory Science Seminar	1

Credit Hours 10

Total Credit Hours 63

Note: 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.

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 Instrumentation	3
MLS 325	Clinical Instrumentation Methods	1
MLS 330	Clinical Immunology/Serology	2
MLS 331	Clinical Immunology/Serology Laboratory	1
MDTS 401	Molecular Diagnostics Laboratory	3
Credit Hours		17

Spring

MLS 309	Medical Bacteriology	3
MLS 310	Urinalysis and Body Fluids	1
MLS 313	Diagnostic Methods in Urinalysis	1
MLS 319	Medical Bacteriology Methods	2
MLS 326	Immunohematology	3
MLS 328	Advanced Hematology and Hemostasis	2
MLS 336	Immunohematology Laboratory	1
MLS 339	Medical Parasitology and Mycology Laboratory	1
MLS 340	Medical Parasitology, Mycology, and Virology	1
MLS 351	Clinical Biochemistry	3
Credit Hours		18

Summer

MLS 320	Blood Collection Techniques	2
MLS 406	Clinical Microbiology Practicum	5
MLS 454	Clinical Blood Bank Practicum	4

Credit Hours 11**Senior****Fall**

MLS 403W	Management in the Clinical Setting	3
MLS 440	Statistical Applications and Data Analysis in the Clinical Laboratory	3

Credit Hours 6**Spring**

MLS 404	Clinical Hematology Practicum	4
MLS 452	Clinical Biochemistry Practicum	5
MLS 457	Medical Laboratory Science Seminar	1

Credit Hours 10**Total Credit Hours 121**