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

Program Director:
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College of Health Sciences
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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. A grade of C (2.00) or better is required in all medical laboratory science/medical technology course work for continuance in the program.

Completion of Senior Assessment.

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

& CHEM 211 Organic Chemistry I Lecture

& CHEM 212 and Organic Chemistry I Laboratory

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

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
Medical Laboratory Science Major

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

Departmental Requirements
Complete departmental requirements 13

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 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

**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

Medical Laboratory Science (BSMLS) 2
### Sophomore

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<tr>
<th>Semester</th>
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<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>Fall</strong></td>
<td>MLS 210</td>
<td>Orientation to Medical Laboratory Science</td>
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<tr>
<td></td>
<td>CHEM 123N</td>
<td>Foundations of Chemistry II Lecture</td>
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<td>CHEM 124N</td>
<td>Foundations of Chemistry II Laboratory</td>
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<td></td>
<td>BIOL 250</td>
<td>Human Anatomy and Physiology I</td>
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<td>Literature</td>
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<td>Human Behavior</td>
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**Credit Hours:** 15

### Spring

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<td><strong>BIOL 251</strong></td>
<td>Human Anatomy and Physiology II</td>
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<td>CHEM 211</td>
<td>Organic Chemistry I Lecture</td>
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<td>CHEM 212</td>
<td>Organic Chemistry I Laboratory</td>
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<td></td>
<td>Impact of Technology (Option D 300/400)</td>
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<td></td>
<td>Philosophy and Ethics (Option D 300/400)</td>
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**Credit Hours:** 15

### Junior

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<tr>
<td><strong>Fall</strong></td>
<td>MLS 307</td>
<td>Clinical Methods in Microbiology</td>
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<td>MLS 308</td>
<td>Clinical Microbiology</td>
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<td>MLS 311</td>
<td>Hematology</td>
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<td>MLS 312</td>
<td>Hematology Laboratory</td>
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<td>MLS 324</td>
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<td>Clinical Instrumentation Methods</td>
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<td></td>
<td>MLS 330</td>
<td>Clinical Immunology/Serology</td>
<td>2</td>
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<td></td>
<td>MLS 331</td>
<td>Clinical Immunology/Serology Laboratory</td>
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<tr>
<td></td>
<td>MDT 401</td>
<td>Molecular Diagnostics Laboratory</td>
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**Credit Hours:** 17

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<td><strong>MLS 309</strong></td>
<td>Medical Bacteriology</td>
<td>3</td>
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<td></td>
<td>MLS 310</td>
<td>Urinalysis and Body Fluids</td>
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<td>MLS 319</td>
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<td>Advanced Hematology and Hemostasis</td>
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<td>MLS 351</td>
<td>Clinical Biochemistry</td>
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**Credit Hours:** 18

### Senior

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<td><strong>Fall</strong></td>
<td>MLS 403W</td>
<td>Management in the Clinical Setting</td>
<td>3</td>
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<td></td>
<td>MLS 440</td>
<td>Statistical Applications and Data Analysis in the Clinical Laboratory</td>
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**Credit Hours:** 6

### Summer

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<td><strong>MLS 320</strong></td>
<td>Blood Collection Techniques</td>
<td>2</td>
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<td>MLS 406</td>
<td>Clinical Microbiology Practicum</td>
<td>5</td>
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<tr>
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<td>MLS 454</td>
<td>Clinical Blood Bank Practicum</td>
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**Credit Hours:** 11

### Fall

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<td>MLS 452</td>
<td>Clinical Biochemistry Practicum</td>
<td>5</td>
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<td></td>
<td>MLS 457</td>
<td>Medical Laboratory Science Seminar</td>
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**Credit Hours:** 10

**Total Credit Hours:** 121