

# MEDICAL LABORATORY SCIENCE

## Bachelor of Science - Medical Laboratory Science

### College Humanities & Sciences

Degree Specific Credits: 86 - 93

Required Cumulative GPA: 2.0

### Catalog Year: 2017-2018

**Note:** A Medical Laboratory Science degree prepares students to perform various chemical, histological, and microbial laboratory procedures used in the diagnosis, study, and treatment of disease. Students with this degree seek employment in hospital laboratories, physicians' offices, and health departments. For clinical practice, a student must be certified through the Board of Registry by completing a one year clinical practicum.

## General Education Requirement

Information regarding these requirements can be found in the General Education Section (<http://catalog.umd.edu/academics/general-education-requirements>) of the catalog.

## Summary

Lower Division Biology Courses	8
Required Major Courses for Medical Technology 4 + 1 or 3 + 1	31-38
Required Courses Outside the Major	42
Mathematics - Calculus	
Mathematics - Statistics	
Chemistry	
Physics	
Upper Division Writing Expectation for the Major	5
Total Hours	86-93

### Lower Division Biology Courses

**Rule:** All of the following courses are required.

**Note:** Either BIOB 160N (C- or better) or BCH 110/BCH 111 (C- or better) or BIOH 112 (B- or better) must be taken as a prerequisite for BIOB 260, unless a student has AP Biology credit.

BIOB 260	Cellular and Molecular Biology	4
BIOB 272	Genetics and Evolution	4
Total Hours		8

Minimum Required Grade: C-

### Required Courses Outside the Major

#### Mathematics - Calculus

**Rule:** Complete one of the following calculus courses

M 162 or M 171	Applied Calculus Calculus I	4
Total Hours		4

Minimum Required Grade: C-

#### Mathematics - Statistics

**Rule:** The following course is required

STAT 216	Introduction to Statistics	4
Total Hours		4

Minimum Required Grade: C-

#### Physics

**Rule:** All of the following courses are required

Select one of the following physics sequences:	10
Algebra- and Trigonometry-based:	
PHSX 205N & PHSX 206N	College Physics I and College Physics I Laboratory
PHSX 207N & PHSX 208N	College Physics II and College Physics II Laboratory
Calculus-based:	
PHSX 215N & PHSX 216N	Fund of Physics w/Calc I and Physics Laboratory I w/Calc
PHSX 217N & PHSX 218N	Fund of Physics w/Calc II and Physics Laboratory II w/Calc
Total Hours	10

### Advanced College Writing Requirement

**Rule:** Complete the equivalent of a full writing course (either three 1/3 writing courses or one 2/3 writing course + one 1/3 writing course or one complete writing course).

**Note:** To meet the Advanced College Writing Requirement, Medical Laboratory Science 4+1 students take BIOB 410 (a 1/3 writing course) and BIOB 411 (a 2/3 writing course).

**Note:** To meet the Advanced College Writing Requirement, Medical Laboratory Science 3+1 students take two 1/3 writing courses (BIOB 410 and BIOM 402). The Advanced College Writing Requirement is completed with one more course, chosen from any of the following. (BIOB 411 is recommended by many of the clinical practicum affiliates).

Minimum Required Grade: C-

### 1/3 Advanced Writing Courses

BCH 482	Advanced Biochemistry II	3
BIOB 410	Immunology	3
BIOB 425	Adv Cell & Molecular Biology	3
BIOB 483	Phylogenics and Evolution	3
BIOE 403	Vert Design & Evolution	5
BIOE 409	Behavior & Evolution Discussion	1
BIOE 428	Freshwater Ecology	5
BIOL 484	Plant Evolution	3
BIOM 402	Medical Bacteriology& Mycology	3
BIOO 320	General Botany	5
BIOO 434	Plant Physiology Lab	1

BIOO 470	Ornithology	4
BIOO 475	Mammalogy	4

**2/3 Advanced Writing Courses**

BCH 486	Biochemistry Research Lab	3
BCH 499	Senior Thesis/Capstone	3-6
BIOB 411	Immunology Laboratory (recommended)	2
BIOB 499	Undergraduate Thesis	3-6
BIOE 342	Field Ecology	5
BIOE 371	Gen Ecology Lab (equiv to 271)	2
BIOM 411	Exprmntl Microbial Genetics Lab	1
BIOM 499	Undergraduate Thesis	3-6

**Complete Advanced Writing Course**

BIOH 462	Principles Medical Physiology	3
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**Exception to the Modern/Classical Languages Requirement**

**Rule:** Choose one of the following Math courses

**Note:** The Division of Biological Sciences has been granted an exception to the Modern/Classical Languages Requirement. Either of these calculus courses (required by the major) will satisfy this requirement.

M 162	Applied Calculus	4
or M 171	Calculus I	

Total Hours		4
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Minimum Required Grade: C-

**Bachelor of Science - Medical Laboratory Science; Track: 4 + 1**

The 4+1 track is the more flexible option, in which students complete the four years of the Bachelor's degree on the UM campus. Students may apply to a clinical practicum program anywhere in the country.

**Required Major Courses for Medical Laboratory Science 4 + 1**

**Rule:** All of the following courses are required

Select one of the following:

BCH 380	Biochemistry	4
or BCH 480 & BCH 482	Advanced Biochemistry I and Advanced Biochemistry II	
BIOB 410	Immunology	3
BIOB 411	Immunology Laboratory	2
BIOH 365	Human AP I for Health Profns	4
BIOH 405	Hematology	3
BIOM 360	General Microbiology	3
BIOM 361	General Microbiology Lab	2
BIOM 402	Medical Bacteriology & Mycology	3
BIOM 403	Medicl Bacteriology & Myclgy Lb	2
BIOM 407	Clinical Diagnosis	2
BIOM 408	Clinical Diagnosis Lab	1
BIOM 427	General Parasitology	2

BIOM 428	General Parasitology Lab	2
BIOM 435	Virology	3

**Chemistry**

**Rule:** All of the following courses are required

CHMY 141N	College Chemistry I	4
CHMY 142N	College Chemistry I Lab	1
CHMY 143N	College Chemistry II	4
CHMY 144N	College Chemistry II Lab	1
CHMY 221	Organic Chemistry I	3
CHMY 222	Organic Chemistry I Lab	2
CHMY 223	Organic Chemistry II	3
CHMY 224	Organic Chemistry II Lab	2
CHMY 311	Analytical Chem-Quant Analysis	4

Total Hours		24
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**Bachelor of Science - Medical Laboratory Science; Track: 3 + 1**

The 3+1 track is the faster option, as the clinical practicum year is part of the degree. Three years are spent on the UM campus, and then the clinical practicum year with the MUS CLS program (or with one of our affiliated programs) is the fourth year of the Bachelor's degree. Note: this degree requires a total of 130 credits.

**Required Major Courses for Medical Laboratory Science 3 + 1**

**Rule:** All of the following courses are required

BCH 380	Biochemistry	4
BIOB 410	Immunology	3
BIOH 365	Human AP I for Health Profns	4
BIOH 405	Hematology	3
BIOM 360	General Microbiology	3
BIOM 361	General Microbiology Lab	2
BIOM 402	Medical Bacteriology & Mycology	3
BIOM 403	Medicl Bacteriology & Myclgy Lb	2
BIOM 427	General Parasitology	2
BIOM 428	General Parasitology Lab	2
BIOM 435	Virology	3

Total Hours		31
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Minimum Required Grade: C-

**Required Professional Practicum**

**Rule:** All of the following courses are required

**Note:** You must apply for the professional practicum to one of our affiliated programs during the autumn prior to enrollment. To be competitive for this practicum, you must be in good academic standing with a minimum GPA of ~3.0, and demonstrate a commitment to the clinical laboratory profession. For more information, visit the Medical Laboratory Sciences website (<http://hs.umt.edu/medtech>). Contact Dr. Mike Minnick to apply for the practicum.

BIOH 470	Summer Clinical Laboratory	12
BIOH 471	Professional Training I	13

BIOH 472	Professional Training II	12
Total Hours		37

Minimum Required Grade: C-

### **Chemistry**

**Rule:** All of the following courses are required

CHMY 141N	College Chemistry I	4
CHMY 142N	College Chemistry I Lab	1
CHMY 143N	College Chemistry II	4
CHMY 144N	College Chemistry II Lab	1
CHMY 221	Organic Chemistry I	3
CHMY 222	Organic Chemistry I Lab	2
Total Hours		15

Minimum Required Grade: C-

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