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.umt.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 BIOL 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 BIOL 260, unless a student has AP Biology credit.

BIOL 260 Cellular and Molecular Biology 4
BIOL 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 Applied Calculus 4
or M 171 Calculus I

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 BIOL 410 (a 1/3 writing course) and BIOL 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 (BIOL 410 and BIOM 402). The Advanced College Writing Requirement is completed with one more course, chosen from any of the following (BIOL 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
BIOL 410 Immunology 3
BIOL 425 Adv Cell & Molecular Biology 3
BIOL 483 Phylogenics and Evolution 3
BIOL 403 Vert Design & Evolution 5
BIOL 409 Behavior & Evolution Discussion 1
BIOL 428 Freshwater Ecology 5
BIOL 484 Plant Evolution 3
BIOM 402 Medical Bacteriology & Mycology 3
BIOL 320 General Botany 5
BIOL 434 Plant Physiology Lab 1
BIOL 470 Ornithology 4
### 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCH 380</td>
<td>Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>BIOB 410</td>
<td>Immunology</td>
<td>3</td>
</tr>
<tr>
<td>BIOB 411</td>
<td>Immunology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>BIOH 365</td>
<td>Human AP I for Health Profsns</td>
<td>4</td>
</tr>
<tr>
<td>BIOH 405</td>
<td>Hematology</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 360</td>
<td>General Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 361</td>
<td>General Microbiology Lab</td>
<td>2</td>
</tr>
<tr>
<td>BIOM 402</td>
<td>Medical Bacteriology &amp; Mycology</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 403</td>
<td>Medical Bacteriology &amp; Mycology Lab</td>
<td>2</td>
</tr>
<tr>
<td>BIOM 407</td>
<td>Clinical Diagnosis</td>
<td>2</td>
</tr>
<tr>
<td>BIOM 408</td>
<td>Clinical Diagnosis Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOM 427</td>
<td>General Parasitology</td>
<td>2</td>
</tr>
<tr>
<td>BIOM 428</td>
<td>General Parasitology Lab</td>
<td>2</td>
</tr>
</tbody>
</table>

Minimum Required Grade: C-

### 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

Select one of the following:

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</tr>
<tr>
<td>BIOM 360</td>
<td>General Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 361</td>
<td>General Microbiology Lab</td>
<td>2</td>
</tr>
<tr>
<td>BIOM 402</td>
<td>Medical Bacteriology &amp; Mycology</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 403</td>
<td>Medical Bacteriology &amp; Mycology Lab</td>
<td>2</td>
</tr>
<tr>
<td>BIOM 407</td>
<td>Clinical Diagnosis</td>
<td>2</td>
</tr>
<tr>
<td>BIOM 408</td>
<td>Clinical Diagnosis Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOM 427</td>
<td>General Parasitology</td>
<td>2</td>
</tr>
<tr>
<td>BIOM 428</td>
<td>General Parasitology Lab</td>
<td>2</td>
</tr>
<tr>
<td>BIOH 470</td>
<td>Summer Clinical Laboratory</td>
<td>12</td>
</tr>
<tr>
<td>BIOH 471</td>
<td>Professional Training I</td>
<td>13</td>
</tr>
</tbody>
</table>

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.

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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.

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<tbody>
<tr>
<td>M 162</td>
<td>Applied Calculus</td>
<td>4</td>
</tr>
<tr>
<td>or M 171</td>
<td>Calculus I</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Hours: 4

Minimum Required Grade: C-
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-