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 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 | 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 Genetcs Lab 1
BIOM 499 Undergraduate Thesis 3-6

Complete Advanced Writing Course
BIOH 462 Principles Medical Physiology 3

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

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 Advanced Biochemistry I
& BCH 482 and Advanced Biochemistry II
BIOB 410 Immunology 3
BIOB 411 Immunology Laboratory 2
BIOH 365 Human AP I for Health Profsns 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 Bacteriolog & 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

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 Profsns 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 Bacteriolog & Myclgy Lb 2
BIOM 427 General Parasitology 2
BIOM 428 General Parasitology Lab 2
BIOM 435 Virology 3

Total Hours 31

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
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOH 472</td>
<td>Professional Training II</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>37</td>
</tr>
</tbody>
</table>

Minimum Required Grade: C-

**Chemistry**

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHMY 141N</td>
<td>College Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHMY 142N</td>
<td>College Chemistry I Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHMY 143N</td>
<td>College Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>CHMY 144N</td>
<td>College Chemistry II Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHMY 221</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHMY 222</td>
<td>Organic Chemistry I Lab</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>15</td>
</tr>
</tbody>
</table>

Minimum Required Grade: C-