

MEDICAL LABORATORY SCIENCE B.S.

Bachelor of Science - Medical Laboratory Science

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

Code	Title	Hours
Lower-Division Biology Courses		8
Required Courses Outside the Major		8
Tracks		70-83
4 + 1 Track		
3 + 1 Track		
Advanced College Writing Requirement		
Total Hours		86-99

Degree Specific Credits: 86 (4+1), 99 (3+1)

Required Cumulative GPA: 2.0

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.

Lower Division Biology Courses

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.

Code	Title	Hours
Complete all of the following courses:		
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

Code	Title	Hours
Complete one of the following courses:		
M 162	Applied Calculus	4

M 171	Calculus I	
Total Hours		4

Minimum Required Grade: C-

Mathematics - Statistics

Code	Title	Hours
Complete the following course:		
STAT 216	Introduction to Statistics	4
Total Hours		4

Minimum Required Grade: C-

Medical Laboratory Science; Track: 4 + 1

Note: 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 Track

Code	Title	Hours
Complete all of the following courses:		
BCH 380	Biochemistry	4
BIOB 410	Immunology	3
BIOB 411	Immunology Laboratory	2
BIOH 365 & BIOH 366	Human Anatomy and Physiology for Health Professions I and Human Anatomy and Physiology for Health Professions I Laboratory	4
BIOH 405	Hematology	3
BIOM 360	General Microbiology	3
BIOM 361	General Microbiology Lab	2
BIOM 402	Pathogenic Microbes	3
BIOM 403	Pathogenic Microbes Laboratory	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
Total Hours		36

Minimum Required Grade: C-

Chemistry

Code	Title	Hours
Complete all of the following courses:		
CHMY 141N & CHMY 142N	College Chemistry I and College Chemistry I Lab	5
CHMY 143N & CHMY 144N	College Chemistry II and College Chemistry II Lab	5
CHMY 221 & CHMY 222	Organic Chemistry I and Organic Chemistry I Lab	5
CHMY 223 & CHMY 224	Organic Chemistry II and Organic Chemistry II Lab	5

CHMY 311	Analytical Chemistry-Quantitative Analysis	4
Total Hours		24

Minimum Required Grade: C-

Physics

Code	Title	Hours
Complete one of the following Physics sequences:		10
Algebra- and Trigonometry-based Physics:		
PHSX 205N & PHSX 206N	College Physics I and College Physics I Laboratory	10
PHSX 207N & PHSX 208N	College Physics II and College Physics II Laboratory	
Calculus-based Physics:		
PHSX 215N & PHSX 216N	Fundamentals of Physics with Calculus I and Physics Laboratory I with Calculus	10
PHSX 217N & PHSX 218N	Fundamentals of Physics with Calculus II and Physics Laboratory II with Calculus	
Total Hours		10

Minimum Required Grade: C-

Medical Laboratory Science; Track: 3 + 1

Note: 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 Montana University System Medical Laboratory Training 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

Code	Title	Hours
Complete all of the following courses:		
BCH 380	Biochemistry	4
BIOB 410	Immunology	3
BIOH 365 & BIOH 366	Human Anatomy and Physiology for Health Professions I and Human Anatomy and Physiology for Health Professions I Laboratory	4
BIOH 405	Hematology	3
BIOM 360	General Microbiology	3
BIOM 361	General Microbiology Lab	2
BIOM 402	Pathogenic Microbes	3
BIOM 403	Pathogenic Microbes Laboratory	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

Note: The student must apply for the professional practicum to one of our affiliated programs during the autumn prior to enrollment. To be competitive for this practicum, a student 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.

Code	Title	Hours
Complete all of the following courses:		
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

Code	Title	Hours
Complete all of the following courses:		
CHMY 141N & CHMY 142N	College Chemistry I and College Chemistry I Lab	5
CHMY 143N & CHMY 144N	College Chemistry II and College Chemistry II Lab	5
CHMY 221 & CHMY 222	Organic Chemistry I and Organic Chemistry I Lab	5
Total Hours		15

Minimum Required Grade: C-

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).
- 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).
- 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 clinical practicum programs).

1/3 Advanced Writing Courses

Code	Title	Hours
BCH 482	Advanced Biochemistry II	3
BIOB 410	Immunology	3
BIOB 425	Advanced Cellular & Molecular Biology	3
BIOB 483	Phylogenics and Evolution	3
BIOE 403	Comparative Vertebrate Anatomy	4
BIOE 409	Behavior & Evolution Discussion	1
BIOE 428	Freshwater Ecology	5
BIOM 402	Pathogenic Microbes	3
BIOO 320	General Botany	5
BIOO 434	Plant Physiology Lab	1
BIOO 470	Ornithology	4
BIOO 475	Mammalogy	4

Minimum Required Grade: C-

2/3 Advanced Writing Courses

Code	Title	Hours
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	General Ecology Lab (equivalent to 271)	2
BIOM 411	Experimental Microbial Genetics Lab	1
BIOM 499	Undergraduate Thesis	3-6

Minimum Required Grade: C-

Complete Advanced Writing Course

Code	Title	Hours
BIOH 462	Principles of Medical Physiology	3
BIOM 420	Host-Microbe Interactions	3

Minimum Required Grade: C-