MEDICAL LABORATORY SCIENCE B.S.

General Degree Requirements

To earn a baccalaureate degree, all students must complete successfully, in addition to any other requirements, the University of Montana General Education Requirements. Please refer to the General Education Requirements page (https://catalog.umt.edu/academics/general-education-requirements/) for more information.

Additional requirements for graduation can be found on the Degree/Certificate Requirements for Graduation page (https://catalog.umt.edu/academics/graduation-requirements/).

Unless otherwise noted in individual program requirements, a minimum grade point average of 2.00 in all work attempted at the University of Montana-Missoula is required for graduation. Please see the Academic Policies and Procedures page (https://catalog.umt.edu/academics/policies-procedures/) for information on how your GPA is calculated.

Courses taken to satisfy the requirements of a major, minor, or certificate program must be completed with a grade of C- or better unless a higher grade is noted in the program requirements.

Bachelor of Science - Medical Laboratory Science

A degree in Medical Laboratory Science 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.

Course Requirements

Code	Title	Hours
Lower-Division Biology Courses		
Complete all of the following courses:		
BIOB 260	Cellular and Molecular Biology	4
BIOB 272	Genetics and Evolution	4
Upper-Division Required Courses		
Complete all of the following courses:		
BCH 380	Biochemistry	4
or BCH 480 & BCH 482	Advanced Biochemistry I and Advanced Biochemistry II	
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 & BIOM 361	General Microbiology and General Microbiology Lab	5
BIOM 402 & BIOM 403	Pathogenic Microbes and Pathogenic Microbes Laboratory	5
BIOM 427 & BIOM 428	General Parasitology and General Parasitology Lab	4
BIOM 435	Virology	3
Mathematics		
Complete all of the following courses:		
M 162	Applied Calculus	4
or M 171	Calculus I	
STAT 216	Introduction to Statistics	4
Chemistry		
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
Writing in the Disciplines Requirement		
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).		
4+1 students take BIOB 410 (a 1/3 writing course) and BIOB 411 (a 2/3 writing course).		
3+1 students take two 1/3 writing courses (BIOB 410 and BIOM 402). The Advanced Writing Requirement is completed with one more course, chosen from any of the courses in the list below. BIOB 411 is recommended by clinical practicum programs.		
4+1 or 3+1 Tracks		
Complete one of the following tracks:		24-37
4+1 Track [1]		
Complete all of the following courses (24 credits):		
BIOB 411	Immunology Laboratory	
BIOM 407	Clinical Diagnosis	
BIOM 408	Clinical Diagnosis Lab	
CHMY 223	Organic Chemistry II	
CHMY 224	Organic Chemistry II Lab	
CHMY 311	Analytical Chemistry-Quantitative Analysis	
PHSX 205N & PHSX 206N	College Physics I and College Physics I Laboratory	
PHSX 207N & PHSX 208N	College Physics II and College Physics II Laboratory	
3+1 Track [2]		
Complete all of the following courses (37 credits):		
BIOH 470	Summer Clinical Laboratory	
BIOH 471	Professional Training I	
BIOH 472	Professional Training II	
Total Hours		**86-99**

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

[2] 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.
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/).

Writing in the Disciplines Distributed Model Courses for Biological Sciences

Code	Title	Hours
1/3 Writing in the Disciplines Courses		
BCH 482	Advanced Biochemistry II	3
BIOB 410	Immunology	3
BIOB 425	Advanced Cellular & Molecular Biology	3
BIOB 483	Phylogenics and Evolution	3
BIOE 371	General Ecology Lab (equivalent to 271)	2
BIOE 403	Comparative Vertebrate Anatomy	4
BIOE 428	Freshwater Ecology	5
BIOH 447	Genes and Development Lab	3
BIOM 327	Vector-Borne Diseases: Public Health Perspectives	3
BIOM 435	Virology	3
BIOO 470	Ornithology	4
BIOO 475	Mammalogy	4
WILD 470	Conservation of Wildlife Populations	4
2/3 Writing in the Disciplines Courses		
BCH 486	Biochemistry Research Lab	3
BCH 499	Senior Thesis/Capstone	3-6
BIOB 411	Immunology Laboratory	2
BIOB 499	Undergraduate Thesis	3-6
BIOE 448	Terrestrial Plant Ecology	4
BIOE 485	Plant Evolution	3
BIOM 499	Undergraduate Thesis	3-6
Full Writing in the Disciplines Courses		
BIOH 462	Principles of Medical Physiology	3
BIOM 420	Host-Microbe Interactions	3

Plan for 4+1 Track

Course	Title	Hours
Freshman		
Autumn		
BIOB 160	Principles of Living Systems	3
CHMY 141N & CHMY 142N	College Chemistry I and College Chemistry I Lab	5
M 162	Applied Calculus	4
General Education Requirement		3
	Hours	**15**
Spring		
CHMY 143N & CHMY 144N	College Chemistry II and College Chemistry II Lab	5
WRIT 101	College Writing I	4
General Education Requirement		3
Elective		3
	Hours	**15**
Sophomore		
Autumn		
BIOB 260	Cellular and Molecular Biology	4
CHMY 221 & CHMY 222	Organic Chemistry I and Organic Chemistry I Lab	5
BIOM 360 & BIOM 361	General Microbiology and General Microbiology Lab	5
Elective		1
	Hours	**15**
Spring		
BIOB 272	Genetics and Evolution	4
CHMY 223 & CHMY 224	Organic Chemistry II and Organic Chemistry II Lab	5
STAT 216	Introduction to Statistics	4
Intermediate Writing Course		3
	Hours	**16**
Junior		
Autumn		
BIOM 427 & BIOM 428	General Parasitology and General Parasitology Lab	4
BIOB 410 & BIOB 411	Immunology and Immunology Laboratory	5
BIOH 365 & BIOH 366	Human Anatomy and Physiology for Health Professions I and Human Anatomy and Physiology for Health Professions I Laboratory	4
Elective		3
	Hours	**16**
Spring		
BIOM 402 & BIOM 403	Pathogenic Microbes and Pathogenic Microbes Laboratory	5
BCH 380	Biochemistry	4
BIOH 405	Hematology	3
General Education Requirement		3
	Hours	**15**
Senior		
Autumn		
PHSX 205N & PHSX 206N	College Physics I and College Physics I Laboratory	5
CHMY 311	Analytical Chemistry-Quantitative Analysis	4
General Education Requirement		6
	Hours	**15**
Spring		
BIOM 407 & BIOM 408	Clinical Diagnosis and Clinical Diagnosis Lab	3
BIOM 435	Virology	3
PHSX 207N & PHSX 208N	College Physics II and College Physics II Laboratory	5
General Education Requirement		3
	Hours	**14**
	Total Hours	**121**

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Plan for 3+1 Track

Course	Title	Hours
Freshman		
Autumn		
BIOB 160	Principles of Living Systems	3
CHMY 141N & CHMY 142N	College Chemistry I and College Chemistry I Lab	5

M 162	Applied Calculus	4
General Education Requirement		3
	Hours	**15**
Spring		
CHMY 143N & CHMY 144N	College Chemistry II and College Chemistry II Lab	5
WRIT 101	College Writing I	4
General Education Requirement		6
	Hours	**15**
Sophomore		
Autumn		
BIOB 260	Cellular and Molecular Biology	4
CHMY 221 & CHMY 222	Organic Chemistry I and Organic Chemistry I Lab	5
BIOM 360 & BIOM 361	General Microbiology and General Microbiology Lab	5
	Hours	**14**
Spring		
BIOB 272	Genetics and Evolution	4
STAT 216	Introduction to Statistics	4
Intermediate Writing / Literary & Artistic Course		3
General Education Requirement		3
	Hours	**14**
Junior		
Autumn		
BIOB 410 & BIOB 411	Immunology and Immunology Laboratory	5
BIOH 365 & BIOH 366	Human Anatomy and Physiology for Health Professions I and Human Anatomy and Physiology for Health Professions I Laboratory	4
BIOM 427 & BIOM 428	General Parasitology and General Parasitology Lab	4
General Education Requirement		3
	Hours	**16**
Spring		
BIOM 402 & BIOM 403	Pathogenic Microbes and Pathogenic Microbes Laboratory	5
BIOM 435	Virology	3
BCH 380	Biochemistry	4
BIOH 405	Hematology	3
	Hours	**15**
Summer		
BIOH 470	Summer Clinical Laboratory	12
	Hours	**12**
Senior		
Autumn		
BIOH 471	Professional Training I [1]	13
	Hours	**13**
Spring		
BIOH 472	Professional Training II [1]	12
	Hours	**12**
	Total Hours	**126**

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[1] Year 4 Practicum / Internship at one of our affiliated programs. MUST apply to programs the prior fall.