

ADVISING WORKSHEET

BACHELOR OF SCIENCE DEGREE MAJOR IN BIOLOGY MEDICAL LABORATORY SCIENCE OPTION GENERAL BULLETIN 2022-2023

TRANSFER INSTITUTION(S):

Montana State University Billings Advising & Career Services Phone: 406-657-2240 Fax: 406-657-2302 advising@msubillings.edu

www.msubillings.edu/advise/

Name	
tudent ID#	

GENERAL EDUCATION REQUIREMENTS - SEE ATTACHED PAGE FOR SPECIFIC COURSES

General Education Category	Course #	Credits	Grade	Semester	Equivalent
Category I: Global Academic Skills (9 credits)					
A. Mathematics (3 credits) STAT 216 – major requirement					
B. English (3 credits)					
C. Communication & Information Literacy (3 credits)					
Category II: Natural Sciences (7 credits)					
2 lectures (6 credits) & 1 lab (1 credit)					
(1 life science & 1 physical science & 1 lab)					
BIOB 160/161 & CHMY 141 are major requirements					
Category III: Social Sciences and History (6 credits)					
A. Social Science (3 credits)					
B. History (3 credits)					
Category IV: Cultural Diversity (3 credits)					
Category V: Arts & Humanities (6 credits)					
A. Fine Arts (3 credits)					
B. Humanities (3 credits)					
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A minimum grade of "C-"is required in all General Education courses.

Note: Certain degrees may require a minimum grade of "C" in General Education courses.

Students should consult with their advisors to determine if specific courses are necessary in order to satisfy the General Education requirements within this program.

Certain courses in this program have prerequisites; students should check the course descriptions in the General Bulletin for required prerequisites.

Revi	ewed:			

GENERAL EDUCATION REQUIREMENTS

CATEGO	ORY I: (GLOBAL ACADEMIC SKILLS	9 cred	lits	CATEGO	RY III:	SOCIAL SCIENCES AND HISTORY	6 CREDITS
		uired to take one course from each su					uired to take one course from each sub-	
		- Mathematics	3 cred				- Social Sciences	3 credits
M	105	Contemporary Mathematics		3	BGEN	105	Introduction to Business	3
M	114	Extended Technical Mathematics		3	COMX	106	Communicating in a Dynamic Work	
M	121	College Algebra		3	ECNS	201	Principles of Microeconomics	3
M	122	College Trigonometry		3	ECNS	202	Principles of Macroeconomics	3
M	130	Mathematics for Elementary Teach	ers I	3	EDU	105	Education and Democracy	3
M	140	College Math for Healthcare		3	HTH	110	Personal Health and Wellness	3
M	143	Finite Mathematics		4	PSCI	210	Introduction to American Governme	
M	161	Survey of Calculus		3	PSCI	220	Introduction to Comparative Govern	
M	171	Calculus I		4	PSYX	100	Introduction to Psychology	3
STAT	141	Introduction to Statistical Concepts		3	SOCI	101	Introduction to Sociology	3
STAT	216	Introduction to Statistics		4	SOCI	201	Social Problems	3
Cubaata	nowe D	English	2 amad	1:40	Cubaata	aawe D	History	2 anadita
		- English	3 cred			-	- History	3 credits
WRIT	101	College Writing I		3	HSTA	101	American History I	3
WRIT	121	Introduction to Technical Writing		3 3	HSTA	102	American History II	3
WRIT	122	Introduction to Business Writing		3	HSTR	159	World History to 1500 CE	3
CL4-	C	Constitution of Table 11.		. 324	HSTR	160	Modern World History	3
		Communication & Information Liter	•		PSCI	230	Introduction to International Relation	ns 3
BMIS		Cyber Security and Electronic Commu	unication					
COMX		Introduction to Public Speaking		3	CATEGO	ORY IV:	CULTURAL DIVERSITY	3 credits
COMX		Introduction to Interpersonal Commun	nication	3	ANTY	220	Culture and Society	3
COMX		Communication in Small Groups		3	ARTH	160	Global Visual Culture	3
LSCI	125	Research in the Information Age		3	COMX	212	Intro to Intercultural Communication	n 3
					GPHY	121	Human Geography	3
_		NATURAL SCIENCES 6 cr. lecture			HTH	270	Global Health Issues	3
Students	are req	uired to take one course from each sub	bcategory	and	LIT	230	World Literature Survey	3
at least o	one corre	esponding lab or Integrated Sciences			MUSI	207	World Music	3
Subcate	gory A	– Life Sciences	3-4 cred	lits	NASX	105	Introduction to Native American Stu	
BIOB	101	Discover Biology		3	NASX	205	Native Americans in Contemporary	Society 3
BIOB	102	Discover Biology Lab		1	DEIL	201	Introduction to Diversity in Counsel	
					REHA	201	introduction to Diversity in Counsei.	
BIOB	121	Fundamentals of Biology for Allied	l Health	3	RLST	170	The Religious Quest	3
BIOB BIOB				3 3				
BIOB BIOB	121 123 160	Fundamentals of Biology for Allied Fund of Biology: The Nature of Nu <i>Principles of Living Systems</i>		3 3 3	RLST	170	The Religious Quest	3
BIOB BIOB	121 123	Fundamentals of Biology for Allied Fund of Biology: The Nature of Nu Principles of Living Systems Principles of Living Systems Lab		3 3 3 1	RLST SPNS	170 150	The Religious Quest The Hispanic Tradition	3 3
BIOB BIOB SCIN	121 123 160 161 101	Fundamentals of Biology for Allied Fund of Biology: The Nature of Nu Principles of Living Systems Principles of Living Systems Lab Integrated Science I		3 3 1 3	RLST SPNS WGSS	170 150 274	The Religious Quest The Hispanic Tradition	3 3
BIOB BIOB	121 123 160 161	Fundamentals of Biology for Allied Fund of Biology: The Nature of Nu Principles of Living Systems Principles of Living Systems Lab		3 3 3 1	RLST SPNS WGSS	170 150 274 ORY V:	The Religious Quest The Hispanic Tradition Women, Culture, and Society ARTS & HUMANITIES	3 3 3 6 credits
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		Course	Credits	Grade	Semester	Equivalent
		A minimum grade of C- or better is requi	red in all maj	jor course	work	
Biology Re *BIOB			2	T		
	160	Principles of Living Systems	3			
* BIOB	161	Principles of Living Systems Lab	1			
BIOM	250	Microbiology for Health Sciences	3			
BIOM	251	Microbiology for Health Sciences Lab	1			
BIOB	260	Cellular and Molecular Biology	3			
BIOB	261	Cellular and Molecular Biology Lab	1			
BIOH	301	Human Anatomy and Physiology I	3			
BIOH	302	Human Anatomy and Physiology I Lab	1			
BIOH	311	Human Anatomy and Physiology II	3			
BIOH	312	Human Anatomy and Physiology II Lab	1			
BIOB	375	General Genetics	3			
BIOB	376	General Genetics Lab	1			
BIOM	400	Medical Microbiology	3			
BIOM	401	Medical Microbiology Lab	1			
BIOH	405	Hematology	3			
BIOH	406	Hematology Lab	1			
BIOB	410	Immunology	3			
BIOM	427	General Parasitology	2			
BIOB	499	Senior Thesis/Capstone	1			
Unrestrict	ed Biolog	y Elective	2			
		Biology Total	40			
Chemistry	Requirer	ments				
*CHMY	141	College Chemistry I	3			
*CHMY	142	College Chemistry Lab I	1			
СНМҮ	143	College Chemistry II	3			
			- -			

*CHMY	141	College Chemistry I	3		
*CHMY	142	College Chemistry Lab I	1		
CHMY	143	College Chemistry II	3		
CHMY	144	College Chemistry Lab II	1		
CHMY	211	Elements of Organic Chemistry	3		
CHMY	212	Elements of Organic Chemistry Lab	1		
ВСН	380	Biochemistry	3		
ВСН	381	Biochemistry Lab	1		

Chemistry Total

NOTE: Students wishing to obtain a minor in Chemistry will need to take CHMY 311/312, CHMY 321/322 **and** CHMY 323/324 <u>instead of</u> CHMY 211/212.

 $\underline{Mathematics/Statistics\ Requirement\ (choose\ \underline{one})}$

*STAT	216	Introduction to Statistics	4		
STAT	217	Intermediate Statistical Concepts	4		

16

Physics Requirement (choose **one** Physics course with lab)

*PHSX	205	College Physics I	3		
* PHSX	206	College Physics I Lab	1		
or					
PHSX	220	Physics I	3		
PHSX	221	Physics I Lab	1		

Physics Total

Upper Division Science electives (6 credits)

^CHMY	311	Analytical Chemistry – Quantitative Analysis	3		
^CHMY	312	Analytical Chemistry Laboratory – Quantitative Analysis	1		
	•				

(^Highly recommended **but not required**.) **Total**

Professional Medical Lab Training Core - 37 credits total

#BIOH	470	Summer Clinical Laboratory	V		
#BIOH	471	Professional Training I Fall Semester	V		
#BIOH	472	Professional Training II Spring Semester	V		

[#]These courses require an extra fee.

Courses in the professional training core (BIOH 470 Summer Clinical Laboratory, BIOH 471 Professional Training I Fall Semester and BIOH 472 Professional Training II Spring Semester) will be taught at an affiliated institution which include Montana State University Bozeman; University of North Dakota, Grand Forks; Sacred Heart School of Medical Technology, Spokane, Washington; or the Colorado Center for Medical Laboratory Science, Aurora (www.MedLabEd.org). The training and credits from all four programs will allow students to fulfill the requirements needed to take the national examinations to become certified clinical laboratory scientists or medical technologists. All students enrolled at each training program site will remain MUS students at their respective institutions.

BACHELOR OF SCIENCE DEGREE IN BIOLOGY - MEDICAL LABORATORY SCIENCE OPTION

Categories	Credits	Earned	Remaining
General Education	31		
Biology Requirements	**36		
Chemistry Requirements	***13		
Math/Statistics Requirements	***1		
Physics Requirements	4		
Upper Division Science Electives	6		
Professional Med Lab Training Co	ore 37		
Total	128		

Students with a 2.5 GPA or higher can apply for a fifth year of professional training to earn a degree in Biology/Medical Laboratory Science Option from MSU Billings. Total credits for graduation are 128. Additional credits are required in this option because students take an additional three semesters of courses. These additional semesters are necessary because professional training programs approved by the National Accrediting Agency for Clinical Laboratory Science (NAACLS, www.naacls.org) are 12 months in duration. All students desiring to become a certified Clinical Laboratory Scientist must take a national certification examination upon completion of the year of professional training.

It is the student's responsibility to know and meet the requirements for graduation.

A minimum of 36 credits must be upper division classes (300 and above).

^{*}May satisfy General Education requirements.

^{**4} credits that also satisfy General Education requirements are not included in the total number of credits.

^{***3} credits that also satisfy General Education requirements are not included in the total number of credits.