

ADVISING WORKSHEET

BACHELOR OF SCIENCE DEGREE MAJOR IN BIOLOGY MEDICAL LABORATORY SCIENCE OPTION General Bulletin 2020-2021

TRANSFER INSTITUTION(S):	

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www.msubillings.edu/advise/

Name	 	
Student 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)					

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

G	g	0 114	C. === 0.0	TTT	Coores Commission and Assessments	(an
		9 credits				6 CREDITS
Students are req	uired to take one course from each subc	ategory	Students	are req	uired to take one course from each subc	ategory
Subcategory A	- Mathematics	3 credits	Subcate	gory A	- Social Sciences	3 credits
M 105	Contemporary Mathematics	3	ANTY	217	Physical Anthropology & Archeolog	y 3
M 114	Extended Technical Mathematics	3	BGEN	105	Introduction to Business	3
M 121	College Algebra	3	COMX	106	Communicating in a Dynamic Work	
M 122	College Trigonometry	3	ECNS	201	Principles of Microeconomics	3
M 130	Mathematics for Elementary Teachers		ECNS	202	Principles of Macroeconomics	3
M 140	College Math for Healthcare	3	EDU	105	Education and Democracy	3
M 143	Finite Mathematics	4	HTH	110	Personal Health and Wellness	3
M 161	Survey of Calculus	3	PSCI	210	Introduction to American Government	
M 171	Calculus I	4	PSCI	220	Introduction to Comparative Governi	
STAT 141	Introduction to Statistical Concepts	3	PSYX	100	Introduction to Psychology	3
STAT 216	Introduction to Statistics	4	SOCI	101	Introduction to Sociology	3
			SOCI	201	Social Problems	3
Subcategory B	- Fnalich	3 credits	5561	201	Social Problems	
WRIT 101	College Writing I	3	Subcata	gory R	- History	3 credits
WRIT 121	Introduction to Technical Writing	3	HSTA	101	American History I	3
WRIT 122	Introduction to Business Writing	3	HSTA	102	American History II	3
WRIT 201	College Writing II	3	HSTR	101	Western Civilization I	3
WRIT 220	Business & Professional Writing	3	HSTR	102	Western Civilization II	3
WRIT 221	Intermediate Technical Writing	3	HSTR	103	Honors Western Civilization I	3
			HSTR	104	Honors Western Civilization II	3
Subcategory C.	· Communication & Information Literac	v 3 credits	PSCI	230	Introduction to International Relation	
	Cyber Security and Electronic Communication		1 Ser	230	indoduction to international relation	.5
	Introduction to Public Speaking	3				2 111
	Introduction to 1 uone Speaking Introduction to Interpersonal Communication				CULTURAL DIVERSITY	3 credits
			ANTY	220	Culture and Society	3
LSCI 125	Research in the Information Age	3	ARTH	160	Global Visual Culture	3
			COMX	212	Intro to Intercultural Communication	
CATEGORY II: N	NATURAL SCIENCES 6 cr. lecture &	z 1 cr. lab	GPHY	121	Human Geography	3
	uired to take one course from each subca		НТН	270	Global Health Issues	3
		legory and				
	esponding lab or Integrated Sciences	4 704	LIT	230	World Literature Survey	3
Subcategory A		4 credits	MUSI	207	World Music	3
BIOB 101	Discover Biology	3	NASX	105	Introduction to Native American Stud	
BIOB 102	Discover Biology Lab	1	NASX	205	Native Americans in Contemporary S	Society 3
BIOB 121	Fundamentals of Biology for Allied H	ealth 3	PHL	271	Indian Philosophies and Religions	3
BIOB 122	Fund of Biology: Evolution, Ecology,		PHL	272	Chinese Philosophies and Religions	3
	Biodiversity	3	REHA	201	Introduction to Diversity in Counseling	
BIOB 123	Fund of Biology: The Nature of Nutrit		RLST	170	The Religious Quest	3
BIOB 160	Principles of Living Systems	3	SPNS	150	The Hispanic Tradition	3
BIOB 161	Principles of Living Systems Lab	1	WGSS	274	Women, Culture, and Society	3
	7 1					
	·	4 credits	CATEGO	RY V:	ARTS & HUMANITIES	6 credits
ASTR 110	Introduction to Astronomy	3	Students	are rea	uired to take one course from each subc	ategory
ASTR 111	Introduction to Astronomy Lab	1	Subcate	gory A	- Fine Arts	3 credits
CHMY 121	Introduction to General Chemistry	3			Art Fundamentals	
CHMY 122	Introduction to General Chemistry Lab) 1	ARTZ	101		3
CHMY 141	College Chemistry I	3	ARTZ	105	Visual Language-Drawing	3
CHMY 142	College Chemistry Laboratory I	1	ARTZ	106	Visual Language-2-D Foundations	3
	Introduction to Physical Geology	3	ARTZ	108	Visual Language-3-D Foundations	3
			ARTZ	131	Ceramics for Non-majors	3
GEO 102	Introduction to Physical Geology Labo		CRWR	240	Intro Creative Writing Workshop	3
GPHY 262	Spatial Sciences Technology & Applic	cations 3	FILM	160	Introduction to World Cinema	3
GPHY 263	Spatial Sciences & Technology Lab	1	LIT	270	Film & Literature	3
PHSX 103	Our Physical World	3				
PHSX 104	Our Physical World Lab	1	MART	260	Computer Presentation and Animatio	
PHSX 205	College Physics I	3	MUSI	101	Enjoyment of Music	3
			MUSI	114	Band: MSUB Symphonic	1
PHSX 206	College Physics I Lab	1	MUSI	131	Jazz Ensemble I: MSUB	1
			MUSI	147	Choral Ensemble: University Chorus	1
Integrated Scien			PHOT	154	Exploring Digital Photography	3
SCIN 101, 102, 10	3, 104 Integrated Sciences	3, 1, 3, 1	THTR	101	Introduction to Theatre	3
			THTR	120	Introduction to Acting I	3
			Subsete	gory D	- Humanities	3 credits
			ARTH	догу Б 150		
					Introduction to Art History	3
			HONR	111	Perspectives and Understanding	3
			LIT	110	Introduction to Literature	3
			TTT		3.6	_

LIT

PHL

PHL

 PHL

213

110

111

254

Montana Literature

People and Politics

Introduction to Ethics Philosophies of Life 3 3 3

		Course	Credits	Grade	Semester	Equivalent	
D! -1 D	A minimum grade of C- or better is required in all major coursework						
*BIOB	equirem 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	311	Human Anatomy and Physiology II Lab					
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	gy Elective	2				
		Biology Total	40				
Chemistr	v Requir	ements					
*CHMY	141	College Chemistry I	3				
*CHMY	142	College Chemistry Lab I	1				
СНМҮ	143	College Chemistry II	3				
CHMY	144	College Chemistry Lab II	1				
CHMY	211	Elements of Organic Chemistry	3				
СНМҮ	212	Elements of Organic Chemistry Lab	1				
ВСН	380	Biochemistry	3				
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Chemistry Total 16

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.

Mathematics/Statistics Requirement (choose one)

Biochemistry Lab

BCH

381

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

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

	- 1	J	,		
*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		
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(^Highly recommended **but not required**.) **Total** 6

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.