

# BIOLOGY BACHELOR OF SCIENCE DEGREE

Code	Title	Credits
<b>General Education Requirements</b> ( <a href="https://catalog.msubillings.edu/undergraduate/general-education-requirements">https://catalog.msubillings.edu/undergraduate/general-education-requirements</a> )		31
Students should consult with an academic advisor before registering for General Education courses in order to minimize the number of courses needed to satisfy the requirements of the major. <sup>1</sup>		
<b>NOTE:</b> 10 credits will be filled with requirements below, leaving 21 credits needed in General Education.		
<b>Biology Requirements</b>		
BIOB 160	Principles of Living Systems *	3
BIOB 161	Principles Living Systems Lab *	1
BIOB 170	Principles of Bio Diversity	3
BIOB 171	Principles Bio Diversity Lab	1
BIOB 260	Cellular & Molecular Biology	3
BIOB 261	Cellular & Molecular Biol Lab	1
BIOB 375	General Genetics	3
BIOB 376	General Genetics Lab	1
BIOB 425	Adv Cell & Molecular Biology	3
BIOB 426	Adv Cell & Molecular Biol Lab	1
BIOB 487	Bioinformatics	3
BIOB 490	Undergraduate Research	2
BIOB 499	Senior Thesis/Capstone	1
BIOE 370	General Ecology	3
BIOE 371	General Ecology Lab	1
BIOM 360	General Microbiology	3
BIOM 361	General Microbiology Lab	1
Upper Division Science Electives		10
Selected in consultation with advisor from the following rubrics: BCH, BIOB, BIOE, BIOH, BIOM, BIOO, CHMY, EARTH, GEO, GPHY, PHSX		
Subtotal		44
<b>Chemistry Requirements</b>		
CHMY 141	College Chemistry I *	3
CHMY 142	College Chemistry I Lab *	1
CHMY 143	College Chemistry II	3
CHMY 144	College Chemistry II Lab	1
CHMY 321	Organic Chemistry I	3
CHMY 322	Organic Chemistry Lab I	1
CHMY 323	Organic Chemistry II	3
CHMY 324	Organic Chemistry Lab II	1
BCH 380	Biochemistry	3
BCH 381	Biochemistry Lab	1
Subtotal		20
<b>Mathematics/Statistics Requirement</b>		
Select two of the following:		7-8
M 161	Survey of Calculus *	
or M 171	Calculus I	
M 172	Calculus II	
STAT 216	Introduction to Statistics *	

or PSYX 223 Research Design and Analysis I  
& PSYX 224 and Research Dsgn & Analysis I Lab

Subtotal		7-8
<b>Physics Requirements</b>		
Select one of the following options:		8
Option 1:		
PHSX 205 & PHSX 206	College Physics I and College Physics I Lab *	
PHSX 207 & PHSX 208	College Physics II and College Physics II Lab	
Option 2:		
PHSX 220 & PHSX 221	Physics I and Physics I Lab	
PHSX 232 & PHSX 233	Physics II & Thermo and Physics II & Thermo Lab	
Subtotal		8
<b>Unrestricted Electives</b>		
		V
		20
The total number of elective credits required for the degree will be determined by the number of courses a student elects to take which fulfill both the General Education requirements and the major requirements. Electives should be chosen in consultation with an academic advisor.		
<b>Total Minimum Credits</b>		120

<sup>1</sup> The following General Education courses also satisfy requirements in the major: BIOB 160, BIOB 161, CHMY 141, and either M 171 or STAT 216.

\* May satisfy General Education requirements.

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

## Suggested Plan of Study

Code	Title	Credits
<b>First Year</b>		
Fall		
BIOB 160 & BIOB 161	Principles of Living Systems and Principles Living Systems Lab	4
CHMY 141 & CHMY 142	College Chemistry I and College Chemistry I Lab	4
Math requirement		4
General Education		v
Total		Varies
Spring		
BIOB 170 & BIOB 171	Principles of Bio Diversity and Principles Bio Diversity Lab	4
CHMY 143 & CHMY 144	College Chemistry II and College Chemistry II Lab	4
Math requirement		4
General Education		v
Total		Varies
<b>Second Year</b>		
Fall		
BIOB 260 & BIOB 261	Cellular & Molecular Biology and Cellular & Molecular Biol Lab	4
CHMY 321 & CHMY 322	Organic Chemistry I and Organic Chemistry Lab I	4

General Education		v
Total		Varies
Spring		
BIOB 375 & BIOB 376	General Genetics and General Genetics Lab	4
CHMY 323 & CHMY 324	Organic Chemistry II and Organic Chemistry Lab II	4
General Education		v
Total		Varies
Third Year		
Fall		
BCH 380 & BCH 381	Biochemistry and Biochemistry Lab	4
BIOB 487	Bioinformatics	3
BIOE 370 & BIOE 371	General Ecology and General Ecology Lab	4
Select one of the following:		4
PHSX 205 & PHSX 206	College Physics I and College Physics I Lab	
PHSX 220 & PHSX 221	Physics I and Physics I Lab	
Gen Ed/Electives		v
Total		Varies
Spring		
BIOB 425 & BIOB 426	Adv Cell & Molecular Biology and Adv Cell & Molecular Biol Lab	4
Select one of the following:		4
PHSX 207 & PHSX 208	College Physics II and College Physics II Lab	
PHSX 232 & PHSX 233	Physics II & Thermo and Physics II & Thermo Lab	
Science Electives		4
Gen Ed/Electives		v
Total		Varies
Fourth Year		
Fall		
BIOM 360 & BIOM 361	General Microbiology and General Microbiology Lab	4
BIOB 490	Undergraduate Research	1
Science Electives		3
Gen Ed/Electives		v
Total		Varies
Spring		
BIOB 490	Undergraduate Research	1
BIOB 499	Senior Thesis/Capstone	1
Science Electives		3
Gen Ed/Electives		v
Total		Varies