BIOLOGY BACHELOR OF ARTS DEGREE

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Describe the cellular basis of living organisms and illustrate the functions of cellular components.
- Describe the molecular basis of cellular function, including inheritance and genetics.
- Describe the major differences between different clades of organisms and explain how these differences relate to ecological attributes.
- Describe the chemical basis of life and the biochemical reactions that make it possible.
- Interpret data and use analytical skills to arrive at conclusions.

Required Courses

Code	Title	Credits
General Education Requirements (https://catalog.msubillings.edu/undergraduate/general-education-requirements/)		**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. [1]		
Note: 9 credits will be filled with requirements below, leaving 22 credits needed in General Education.		
Biology Requirements		
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 490	Undergraduate Research	2
or BIOB 498	Internship/Cooperative Educ	
BIOB 499	Senior Thesis/Capstone	1
Upper Division Science Electives		16
Selected in consultation with advisor from the following rubrics: BCH, BIOB, BIOE, BIOH, BIOM, BIOO, CHMY, ERTH, GEO, GPHY, PHSX		
Subtotal		35
Chemistry Requirements		
CHMY 141	College Chemistry I *	4
CHMY 142	College Chemistry I Lab *	1
CHMY 143	College Chemistry II	4
CHMY 144	College Chemistry II Lab	1
CHMY 211	Elements of Organic Chemistry	3
CHMY 212	Elements of Organic Chem Lab	1
BCH 380	Biochemistry	3
BCH 381	Biochemistry Lab	1
Subtotal		18
Language Requirement (https://catalog.msubillings.edu/undergraduate/college-liberal-arts-social-sciences/#barequirementstext)		**8**
Mathematics/Statistics Requirement		
Select one of the following:		4
M 171	Calculus I *	
STAT 216	Introduction to Statistics *	
Subtotal		4
Minor or Allied Health Concentration		
Select a minor or complete the Allied Health Concentration, which includes the following courses:		
BIOM 250	Microbiology for Hlth Sciences	3
BIOM 251	Microbiology Hlth Sciences Lab	1
BIOH 301	Human Anatomy & Physiology I	3
BIOH 302	Human Anatomy & Phys I Lab	1
BIOH 311	Human Anatomy & Physiology II	3
BIOH 312	Human Anatomy & Phys II Lab	1
NUTR 221	Basic Human Nutrition	3
PSYX 230	Developmental Psychology	3
PSYX 340	Psychological Disorders	3
Subtotal		21
Electives		**v 12**
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.		
Total Minimum Credits		**120**

[1] The following General Education courses also satisfy requirements in the major: BIOB 160, CHMY 141, M 171, and STAT 216. 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

* 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
First Year		
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	5
General Education		3
Elective/Minor		3
Total		15
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	5
General Education		3
Elective/Minor		3
Total		15
Second Year		

Fall		
BIOB 260 & BIOB 261	Cellular & Molecular Biology and Cellular & Molecular Biol Lab	4
Language requirement		4
General Education		3
Math requirement		4
Total		15
Spring		
BIOB 375 & BIOB 376	General Genetics and General Genetics Lab	4
CHMY 211 & CHMY 212	Elements of Organic Chemistry and Elements of Organic Chem Lab	4
Language requirement		4
General Education		3
Total		15
Third Year		
Fall		
BCH 380 & BCH 381	Biochemistry and Biochemistry Lab	4
Science Electives		4
General Education		3
Elective/Minor		4
Total		15
Spring		
Science Electives		4
General Education		3
Elective/Minor		8
Total		15
Fourth Year		
Fall		
BIOB 490 or BIOB 498	Undergraduate Research Internship/Cooperative Educ	1
Science Electives		4
General Education		3
Elective/Minor		7
Total		15
Spring		
BIOB 490 or BIOB 498	Undergraduate Research Internship/Cooperative Educ	1
BIOB 499	Senior Thesis/Capstone	1
Science Electives		4
Elective/Minor		9
Total		15