

# BIOLOGICAL SCIENCES MAJOR

The Biology major is a competitive major. Students must complete BIOL 107 and BIOL 108 with no grade lower than C-. Students must also have completed a minimum of one of BIOL 207 or BIOL 208, and be registered in the remaining course during the winter term when declarations close. The number of new seats available in the Biological Sciences major will be determined by the Biology department annually. Students will submit their declaration by January 15. Students who apply will be ranked by their admissions GPA, which is calculated using their most recent 24 credits of university-level course work, without breaking up a term. Applicants with the highest GPA will be admitted to the program first, until no seats remain. Students will be notified of the success or denial of their application to the Biological Sciences major no later than February 1.

**Total credits required for major - 42 to 60 credits with a minimum of 36 credits at the senior-level.**

A minimum of 18 credits at the 300- or 400- level.

A minimum of 6 credits must be at the 400- level.

**Note:** Students majoring in biological sciences are required to complete CHEM 101, CHEM 102, and STAT 151. These courses can be used to fulfil the Breadth Requirements.

Course ID	Course Name	Credits
<b>Specific Major Requirements</b>		
BIOL 107	Introduction to Cell Biology	3
BIOL 108	Organisms in Their Environment	3
BIOL 207	Principles of Genetics	3
BIOL 208	Principles of Ecology	3
Choose either the General Biological Sciences Major or one of the Molecular/Cellular Stream or the Ecology and Diversity Stream		30-48
<b>Total Credits</b>		<b>42-60</b>

## General Biological Sciences Major Requirements

Course ID	Course Name	Credits
Choose 30 to 48 credits from the following: 30-48		
Junior- and senior-level biological sciences – BICM, BIOL, BOTN, GENE, and ZOO		
SCIE 201	Scientific Process: From Research Questions to Printed Manuscript	
<b>Total Credits</b>		<b>30-48</b>

## Molecular/Cellular Stream Requirements

Course ID	Course Name	Credits
Choose 30 credits from the following: 30		
BICM 200	Introductory Biochemistry	
BICM 310	Intermediary Metabolism	
BICM 320	Structure and Function of Biomolecules	
BICM 330	Nucleic Acid Biochemistry	
BIOL 201	Eukaryotic Cellular Biology I	

BIOL 205	Principles of Molecular Biology	
BIOL 211	Introduction to Microbiology	
BIOL 300	Eukaryotic Cellular Biology II	
BIOL 313	Animal Developmental Biology	
BIOL 315	History of Biology	
BIOL 321	Mechanisms of Evolution	
BIOL 323	Introduction to Population Genetics	
BIOL 337	Biostatistics and Research Design	
BIOL 413	Advanced Animal Developmental Biology	
BIOL 421	Techniques in Molecular and Cellular Biology	
BIOL 430	Pathobiology: The Cellular Basis of Disease	
BIOL 492	Field Placement	
BIOL 495	Special Topics	
BIOL 498	Advanced Independent Study	
GENE 317	Genetics and Society	
GENE 369	Genetic Analysis of Bacteria	
GENE 370	Genetic Analysis of Eukaryotes	
GENE 400	Genome Organization	
GENE 404	Investigations into Gene Regulation	
GENE 418	Human Genetics	
ZOOL 241	Animal Physiology I	
ZOOL 242	Animal Physiology II	
Choose up to 18 credits from the following:		0-18
Junior- and senior-level biological sciences – BICM, BIOL, BOTN, GENE, ZOO		
SCIE 201	Scientific Process: From Research Questions to Printed Manuscript	
<b>Total Credits</b>		<b>30-48</b>

## Ecology and Diversity Stream Requirements

Course ID	Course Name	Credits
Choose 30 credits from the following: 30		
BIOL 310	Freshwater Ecology	
BIOL 312	Terrestrial Ecology	
BIOL 314	Population Ecology	
BIOL 315	History of Biology	
BIOL 316	Community Ecology	
BIOL 321	Mechanisms of Evolution	
BIOL 323	Introduction to Population Genetics	
BIOL 337	Biostatistics and Research Design	
BIOL 361	Marine Biology	
BIOL 365	Tropical Rainforest Ecology	
BIOL 367	Conservation Biology	
BIOL 371	Animal Behaviour	
BIOL 410	Techniques in Field Ecology	
BIOL 414	Invasion Ecology and Management	
BIOL 422	Methods in Experimental Ecology	
BIOL 492	Field Placement	
BIOL 495	Special Topics	
BIOL 498	Advanced Independent Study	
BOTN 205	Fundamentals of Plant Biology	

2 *Biological Sciences Major*

BOTN 305	Plant Responses and Interactions	
ZOOL 224	Vertebrate Adaptations and Evolution	
ZOOL 241	Animal Physiology I	
ZOOL 242	Animal Physiology II	
ZOOL 250	Survey of the Invertebrates	
ZOOL 324	Comparative Anatomy of Vertebrates	
ZOOL 400	Aquatic Vertebrates	
ZOOL 401	Terrestrial Vertebrates	
ZOOL 425	Entomology	
ZOOL 452	Principles of Parasitism	
Choose up to 18 credits from the following:		0-18
Junior- and senior-level biological sciences – BICM, BIOL, BOTN, GENE, and ZOOL		
SCIE 201	Scientific Process: From Research Questions to Printed Manuscript	
<hr/> Total Credits		30-48