

Biology

Bachelor of Science

The biology program enables students to tailor their own curriculum in biology. In addition to receiving a general background in the biological sciences, students focus on specific areas of interest through selection of a wide variety of science electives.

Upon completion of the biology curriculum, a graduate will have a broad background in the biological sciences that will enable them to pursue a career in health or laboratory sciences, public regulatory agencies at community, state, or federal levels, or to continue their education in a wide array of graduate and professional programs.

Biology Requirements:

- General Education Requirements
- Bachelor of Science Requirements
- Major Requirements
- Electives
- Specialization (optional)

Total Credit Hours | 120

General Education Requirements

See details in the General Education section of the catalog.

Bachelor of Science Requirements

6-8 additional hours in math or science, not duplicating core coursework, taken from:

Prefix	Course Number
BIO	101, 102, 105, 114, 115, 121, 122
CHM	101, 111
MAT	111, 112, 116, 117, 215, 220, 227
PHY	101, 111, 112
SCI	211

Major Requirements | 44–46 Credit Hours

Additional Requirements | 6–8 Credit Hours

If not taken as part of the Core or the BS Degree Requirements, students are required to take the following courses:

Class Name	Credit Hours
BIO 114 Introduction to Biology I	4 credit hours
BIO 115 Introduction to Biology II	4 credit hours
<i>(Students earning a specialization in biomedical sciences must take this set of courses)</i>	

Class Name	Credit Hours
OR	
BIO 121 Introduction to Ecology	3 credit hours
BIO 122 Introduction to Evolution	3 credit hours

Core Requirements | 22 Credit Hours

Class Name	Credit Hours
BIO 271 Human Anatomy and Physiology I (<i>BIO 114 and BIO 115 are prerequisites for this course</i>)	4 credit hours
-OR-	
BIO 351 Comparative Vertebrate Anatomy	
BIO 311 Microbiology	4 credit hours
BIO 499 Senior Research for Biology Majors	3 credit hours
CHM 111 General Chemistry I	4 credit hours
CHM 112 General Chemistry II	4 credit hours
MAT 215 Statistics	3 credit hours

Electives | Select 16 Credit Hours

For students not choosing a specialization

Class Name	Credit Hours
Any 300 level BIO course	
Any 400 level BIO course	
CHM 211-212 Organic Chemistry	4-8 credit hours
BIO 467 Biochemistry	4 credit hours
PHY 111-112 General Physics	4-8 credit hours
SCI 271-272 Laboratory Assistant in Science	2-4 credit hours
Additional Elective Courses (enough to reach the 120 hour level)	

Specializations

Specialization	Required Credit Hours
Biomedical Sciences	37 credit hours

Biology

Minor

The biology minor requires at least 21 credit hours beyond general education and degree requirements.

Required Courses | 23 Credit Hours

The following courses must be taken.

Class Name	Credit Hours
BIO 114 Introduction to Biology I	4 credit hours
BIO 115 Introduction to Biology II	4 credit hours
BIO 311 Microbiology	4 credit hours
BIO 361 Genetics	4 credit hours
BIO 461 Cell Biology	4 credit hours

Elective Courses | At least 3 Credit Hours

At least one more 300 or 400 level biology class must be taken from the following courses.

Class Name	Credit Hours
BIO 425 Developmental Biology	4 credit hours
BIO 465 Molecular Biology	3 credit hours
BIO 467 Biochemistry	4 credit hours
BIO 388/488 Special Topics in Biology	3 credit hours

Biology

Specialization in Biomedical Sciences

The biomedical sciences specialization in biology provides a strong foundation in the biological sciences that prepares students for graduate and professional school programs in health-related and veterinary fields. Careers in these areas include biotechnology and academic medical research as well as the medical field including pharmacy, dentistry, optometry, and physical and occupational therapy and health care administration.

Exciting advances in medical technology and research have vastly improved the understanding of the physical and molecular processes underlying human health and disease. Recent discoveries have led to many new therapies that prevent disorders or improve recovery from a wide range of diseases. Developments in medical research have led to the need for highly trained professionals at the research, treatment, and rehabilitation levels of medicine. The biotechnology and the pharmaceutical industries have exploded with new companies as the demand for development of new drug therapies continues. Improved therapies for disease have increased the need for physicians, dentists, pharmacists, and others to provide these health care options. Similarly, professionals at the rehabilitation level, such as nurses and physical and occupational therapists, are also in high demand.

The biomedical sciences program is dedicated to instilling the basic biological foundations required for any health-related field. The biomedical sciences specialization provides a comprehensive program of study of biological systems at the chemical, molecular, and cellular level, including human anatomy and physiology. Laboratory and lecture classes will familiarize students with many of the molecular and biomedical technologies currently in use, and investigate recent developments in the understanding of human disease. Students receive assistance in developing research projects and finding internships or volunteer work that provide opportunities to incorporate and assimilate knowledge from the classroom into practical use in preparation for their chosen careers.

Specialization in Biomedical Sciences | 37 Credit Hours

Required Courses

Class Name	Credit Hours
BIO 272 Human Anatomy and Physiology I	4 credit hours
CHM 211 Organic Chemistry I	4 credit hours
CHM 212 Organic Chemistry II	4 credit hours
PHY 111 General Physics I	4 credit hours
PHY 112 General Physics II	4 credit hours
MAT 117 Calculus I	5 credit hours

In addition to the classes listed above, 12 hours of any 300 or 400 level biology course must be taken.