

2021-22 ACADEMIC CATALOG



# Midway University

# Course Catalog - Biology

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## Biology

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### Bachelor of Science in Biology - Bachelor of Science in Biology

#### Type:Major

Midway University offers a Bachelor of Science in Biology (120 hours) as well as a minor in biology. The program provides preparation in the following areas: general biology; zoology; ecology and evolution; microbiology, genetics, and molecular biology; and pre-professional programs in medical, dental, pharmacy, physical and occupational therapy, and veterinary sciences. Numerous other career opportunities are available to students of biology.

Our faculty advisors assist students in tailoring an academic program for a specific career objective or for postgraduate study. Scientific literacy is promoted through field and laboratory experiences, classroom activities, our Tri-Beta National Biology Honor Society, and presenting scholarly research at state and regional meetings. Our faculty engage with students in scholarly pursuits in their sub-disciplines. These activities provide students with the opportunity to become actively involved in current research. Students at Midway University complete capstone research projects suitable to their scientific interests.

Students in the program will gain field, analytical, and laboratory skills that prepare them for diverse entry-level positions in biology-related areas.

#### Student Learning Outcomes of Program

Upon completion of the curriculum, students will:

- Describe the organization of biological organisms.
- Explain the chemical and physical basis of biological systems.
- Describe the molecular and structural unity and diversity among organisms in the three domains of life.
- Explain how organisms across phylogenetic taxa develop and function within habitat and niches in their environments.
- Conduct research ethically in a biological sub-discipline and communicate scientific data in written theses and/or public presentations.
- Critically evaluate scientific information from a variety of sources.

## **Requirements**

### **Major Course Requirements (Courses in the major require a grade of C or better)**

General Biology I - 3 hours

General Biology I Laboratory - 1 hour

General Biology II - 3 hours

General Biology II Laboratory - 1 hour

### **Choose From the Following Courses**

Microbiology - 3 hours

Cell Biology - 3 hours

### **Choose From the Following Courses**

Global Ecology - 3 hours

General Ecology - 3 hours

### **Additional Major Course Requirements (Courses in the major require a grade of C or better)**

Genetics and Molecular Biology - 3 hours

Ethical Issues in Science - 3 hours

Introduction to Biological Research - 3 hours

Senior Research Data Collection - 2 hours

Senior Biology Research - 1 hour

### **Biology Supporting Courses**

General Chemistry I - 3 hours

General Chemistry Laboratory I - 1 hour

General Chemistry II - 3 hours

General Chemistry Laboratory II - 1 hour

Organic Chemistry I - 3 hours  
Organic Chemistry Laboratory I - 1 hour  
Organic Chemistry II - 3 hours  
Organic Chemistry Laboratory II - 1 hour  
Trigonometry - 1 hour  
Calculus I - 4 hours  
Probability and Statistics - 3 hours  
Physics I - 3 hours  
Physics Laboratory I - 1 hour  
Physics II - 3 hours  
Physics Laboratory II - 1 hour

**Choose 15 additional hours in Major Electives (Courses in the major elective require a C or better) (Students must complete at least two 300- or 400-level laboratories as part of these 15 hours.)**

Anatomy and Physiology I - 3 hours  
Anatomy and Physiology I Laboratory - 1 hour  
Anatomy and Physiology II - 3 hours  
Anatomy and Physiology II Laboratory - 1 hour  
Medical Vocabulary - 2 hours  
Microbiology - 3 hours  
Microbiology Laboratory - 1 hour  
Principles of Botany - 3 hours  
Principles of Botany Laboratory - 1 hour  
Cell Biology - 3 hours  
General Zoology - 3 hours  
General Zoology Laboratory - 1 hour  
Global Ecology - 3 hours  
Topics in Biology - 3 hours  
General Ecology - 3 hours  
General Ecology Lab - 1 hour  
Vertebrate Zoology - 3 hours  
Vertebrate Zoology Laboratory - 1 hour  
Vertebrate Embryology - 3 hours  
Vertebrate Embryology Laboratory - 1 hour  
Histology - 2 hours

Histology Laboratory - 2 hours  
Immunology - 3 hours  
Immunology Laboratory - 1 hour  
Genetics and Molecular Biology - 3 hours  
Genetics and Molecular Biology Laboratory - 1 hour  
Biochemistry - 3 hours  
Biochemistry Laboratory - 1 hour  
Internship - 3 hours  
General Education Hours - 40  
Elective Hours - 8  
Total Hours to Complete - 120

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## **Biology Minor - Biology Minor**

**Type:**Minor

The minor in biology requires a minimum of 18 semester hours selected from courses prefixed BIO. At least 10 hours must be selected from courses numbered 300 or higher.

### **Requirements**

#### **Minor Requirements (Courses in the minor require a grade of C or better)**

General Biology II - 3 hours  
General Biology II Laboratory - 1 hour  
Genetics and Molecular Biology - 3 hours  
Genetics and Molecular Biology Laboratory - 1 hour

#### **Choose additional hours from among the following (Courses require a grade of C or better)**

Anatomy and Physiology II - 3 hours  
Anatomy and Physiology II Laboratory - 1 hour  
Medical Vocabulary - 2 hours  
Microbiology - 3 hours  
Microbiology Laboratory - 1 hour  
Principles of Botany - 3 hours  
Principles of Botany Laboratory - 1 hour  
General Zoology - 3 hours  
General Zoology Laboratory - 1 hour

Global Ecology - 3 hours  
Topics in Biology - 3 hours  
Cell Biology - 3 hours  
General Ecology - 3 hours  
General Ecology Lab - 1 hour  
Vertebrate Zoology - 3 hours  
Vertebrate Zoology Laboratory - 1 hour  
Vertebrate Embryology - 3 hours  
Vertebrate Embryology Laboratory - 1 hour  
Histology - 2 hours  
Histology Laboratory - 2 hours  
Immunology - 3 hours  
Immunology Laboratory - 1 hour  
Biochemistry - 3 hours  
Biochemistry Laboratory - 1 hour  
Elective Hours - 0  
Total Hours to Complete - 18  
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**Midway University**

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