

BIOLOGY

The majors offered by the Department of Biology provide an excellent foundation for graduate studies in biology and professional programs in medicine while preparing students to enter the job market in careers such as education, field biology, or laboratory research. Many opportunities for diverse Biology internships assist students in their career and higher education goals. Students interested in biology/secondary education are encouraged to consider the five-year combined B.S./M.Ed. program.

Majors include:

- **B.S. in Biology** - contains tracks to pursue pre-med and biomedical studies to prepare for medical or graduate school, field work in ecology and environmental areas, or secondary science education.
- **B.A. in Biological Studies** - prepares students for direct immediate entrance into biology-related careers such as laboratory or field research, scientific writing, and medical sales.
- **B.S. in Environmental Science** - provides training for field biology and regulatory policy work.

No matter the student's vocation, we strive to provide a solid background in Biology and cultivate the development of the inquiring mind. Our teaching embodies the Christian worldview that the earth is the Lord's, and all scientific work should serve and honor Christ.

Au Sable Institute Program

In addition to on-campus biology courses, Eastern students may take biology courses offered by Au Sable Institute. Students must have a minimum GPA of 2.5. For further information and course descriptions, students should consult the Au Sable catalog available online at www.ausable.org (<http://www.ausable.org>) and speak to Eastern's faculty representative for Au Sable. Au Sable Institute offers competitive scholarships, but does not qualify for federal and state financial assistance. Professional certification as environmental analyst, land resource analyst, water resource analyst, and naturalist is available.

The Major for the B.S. in Biology

Code	Title	Credit Hours
BIOL 151	General Biology I	4
BIOL 152	General Biology II	4
BIOL 309W	Ecology	4
BIOL 311	Cell Biology	4
BIOL 312	Genetics	4
BIOL 417	Evolution, Creation & Organization of Biology	3
BIOL 425 or BIOL 426	Senior Thesis Literature Review Sr Thesis Directed Research I	2
CHEM 121 & CHEM 123	General Chemistry I and General Chemistry Laboratory I	4
CHEM 122 & CHEM 124W	General Chemistry II and General Chemistry Laboratory II	4
CHEM 211 & CHEM 213W	Organic Chemistry I and Organic Chemistry Laboratory I: Techniques	4
CHEM 212 & CHEM 214	Organic Chemistry II and Organic Chemistry Laboratory II: Reactions	4
Select two of the following:		8
BIOL 310	Animal Physiology ¹	

BIOL 320	Environmental Issues	
BIOL 344 & BIOL 345	Molecular Biology and Molecular Biology Laboratory	
BIOL 350A	Entomology	
BIOL 350AL	Invertebrate Zoology:entomology Laboratory	
BIOL 350B	Vertebrate Zoology	
BIOL 350BL	Vertebrate Biology Laboratory	
BIOL 350C	Vascular Plants	
Biology Elective ²		4
MATH 160 or MATH 220	Calculus I Elementary Statistics	3
Total Credit Hours		56

¹ BIOL 233 Human Physiology & Anatomy I and BIOL 234 Human Physiology & Anatomy II may be substituted for BIOL 310 Animal Physiology with BIOL 234 Human Physiology & Anatomy II counting as a BIOL elective.

² May include CHEM 320 Biochemistry I/CHEM 322 Biochemistry Laboratory, EXSC 411 Cardiovascular Physiology and Pathophysiology and many Au Sable Institute courses.

(For pre-med MATH 160 Calculus I and MATH 220 Elementary Statistics are needed; for field biology and related tracks in the B.S., MATH 220 Elementary Statistics is recommended).

Recommended:

Au Sable Institute field courses (See [ausable.org](http://www.ausable.org) (<http://www.ausable.org>)) (Recommended for field biology track and B.S. in Environmental Science)

Code	Title	Credit Hours
BIOL 495	Internship	2-12
CHEM 320 & CHEM 322	Biochemistry I and Biochemistry Laboratory ¹	4
CHEM 321	Biochemistry II ¹	3
PHYS 151	Introduction to University Physics (Calculus-Based) ²	4
PHYS 152	Introduction to University Physics (Calculus-Based) ²	4

¹ May be taken for major or Biochemistry minor; Required for pre-med track

² Required for pre-med track

Recommended Schedule:

Course	Title	Credit Hours
First Year		
BIOL 151	General Biology I	4
BIOL 152	General Biology II	4
CHEM 121	General Chemistry I	3
CHEM 122	General Chemistry II	3
CHEM 123	General Chemistry Laboratory I	1
CHEM 124	General Chemistry Laboratory II	1
Core Requirements		
Credit Hours		16

Sophomore Year		
BIOL 309W or BIOL 311	Ecology or Cell Biology	4
BIOL 312	Genetics (or take it 3rd year)	4
Select one of the following:		4
BIOL 310	Animal Physiology	
BIOL 320	Environmental Issues	
BIOL 350A	Entomology	
BIOL 350AL	Invertebrate Zoology:entomology Laboratory	
BIOL 350B	Vertebrate Zoology	
BIOL 350BL	Vertebrate Biology Laboratory	
BIOL 350C	Vascular Plants	
CHEM 211	Organic Chemistry I	3
CHEM 212	Organic Chemistry II	3
CHEM 213		1
CHEM 214	Organic Chemistry Laboratory II: Reactions	1
Biology Elective		
Math requirement		
Credit Hours		20
Junior Year		
BIOL 309W or BIOL 311	Ecology or Cell Biology	4
Select one of the following:		4
BIOL 310	Animal Physiology	
BIOL 312	Genetics	
BIOL 320	Environmental Issues	
BIOL 344 & BIOL 345	Molecular Biology and Molecular Biology Laboratory	
BIOL 350A	Entomology	
BIOL 350AL	Invertebrate Zoology:entomology Laboratory	
BIOL 350B	Vertebrate Zoology	
BIOL 350BL	Vertebrate Biology Laboratory	
BIOL 350C	Vascular Plants	
Internship		
Biology Electives		
Credit Hours		8
Senior Year		
BIOL 417	Evolution, Creation & Organization of Biology (spring or Junior year spring if Dec. graduation)	3
Biology Electives, including Internship or Thesis		
Credit Hours		3
Total Credit Hours		47

The Major for the B.A. in Biological Studies

Code	Title	Credit Hours
BIOL 151	General Biology I	4
BIOL 152	General Biology II	4
BIOL 216	Introduction to Microbiology	4
BIOL 316	Techniques in Biotechnology	3
BIOL 417	Evolution, Creation & Organization of Biology	3
BIOL 425 or BIOL 426	Senior Thesis Literature Review Sr Thesis Directed Research I	2
BIOL 495	Internship	3
CHEM 121 & CHEM 123	General Chemistry I and General Chemistry Laboratory I	4
CHEM 122 & CHEM 124W	General Chemistry II and General Chemistry Laboratory II	4

MATH 220	Elementary Statistics	3
Select three of the following:		12
BIOL 309W	Ecology	
BIOL 310	Animal Physiology ¹	
BIOL 311	Cell Biology	
BIOL 312	Genetics	
BIOL 320	Environmental Issues	
BIOL 340	Medical Parasitology	
BIOL 344 & BIOL 345	Molecular Biology and Molecular Biology Laboratory	
BIOL 350A	Entomology	
BIOL 350AL	Invertebrate Zoology:entomology Laboratory	
BIOL 350B	Vertebrate Zoology	
BIOL 350BL	Vertebrate Biology Laboratory	
BIOL 350C	Vascular Plants	
Biology Electives		8
Total Credit Hours		54

¹ BIOL 233 Human Physiology & Anatomy I and BIOL 234 Human Physiology & Anatomy II may be substituted for BIOL 310 Animal Physiology with BIOL 234 Human Physiology & Anatomy II counting as a BIOL elective.

Recommended Schedule:

Course	Title	Credit Hours
First Year		
BIOL 151	General Biology I	4
BIOL 152	General Biology II	4
Core Requirements		
Credit Hours		8
Sophomore Year		
Select one of the following:		4
BIOL 309W	Ecology	
BIOL 310	Animal Physiology	
BIOL 311	Cell Biology	
CHEM 121	General Chemistry I	3
CHEM 122	General Chemistry II	3
CHEM 123	General Chemistry Laboratory I	1
CHEM 124W	General Chemistry Laboratory II	1
Biology Elective		
MATH 220	Elementary Statistics	3
Credit Hours		15
Junior Year		
BIOL 216	Introduction to Microbiology	4
BIOL 316	Techniques in Biotechnology	3
Select one of the following:		4
BIOL 309W or BIOL 312	Ecology or Genetics	
BIOL 320	Environmental Issues	
BIOL 340	Medical Parasitology	
BIOL 350A	Entomology	
BIOL 350AL	Invertebrate Zoology:entomology Laboratory	
BIOL 350B	Vertebrate Zoology	
BIOL 350BL	Vertebrate Biology Laboratory	
BIOL 350C	Vascular Plants	
Internship		
Biology Electives		
Credit Hours		11

Senior Year		
BIOL 417	Evolution, Creation & Organization of Biology (spring or Junior year spring if Dec. graduation)	3
Remaining flexible core Biology class		
BIOL 425 or BIOL 426	Senior Thesis Literature Review or Sr Thesis Directed Research I	2
Credit Hours		5
Total Credit Hours		39

The Major For The B.S. in Environmental Science

Code	Title	Credit Hours
BIOL 151	General Biology I	4
BIOL 152	General Biology II	4
BIOL 309W	Ecology	4
BIOL 320	Environmental Issues	4
BIOL 420	Environmental Regulations and Policy	3
BIOL 425 or BIOL 426	Senior Thesis Literature Review Sr Thesis Directed Research I	2
GEOL 200	Geology	3
Select four BIOL Electives including a minimum of two field biology courses ¹		
CHEM 121 & CHEM 123	General Chemistry I and General Chemistry Laboratory I	4
CHEM 122 & CHEM 124W	General Chemistry II and General Chemistry Laboratory II	4
Select one of the following:		
ECON 203	Macroeconomics	3
ECON 204	Microeconomics	3
POLI 103	American Government	3
POLI 212	International Relations	3
Select one of the following:		
MATH 160	Calculus I	3
MATH 220	Elementary Statistics	3
BUSA 221	Business Statistics	3
Total Credit Hours		52-54

¹ Field biology courses are as follows: Au Sable Institute of Environmental Studies courses, BIOL 206 Ornithology, BIOL 350A Entomology, BIOL 350B Vertebrate Zoology, and BIOL 350C Vascular Plants.

Recommended Schedule:

Course	Title	Credit Hours
First Year		
BIOL 151	General Biology I	4
BIOL 152	General Biology II	4
Core Requirements		
Credit Hours		8
Sophomore Year		
BIOL 309W	Ecology	4
CHEM 121	General Chemistry I	3
CHEM 122	General Chemistry II	3
CHEM 123	General Chemistry Laboratory I	1
CHEM 124	General Chemistry Laboratory II	1

BIOL 320	Environmental Issues (or Elective)	4
Select one of the following:		
POLI 103	American Government	4
POLI 212	International Relations	4
ECON 205	Essentials of Economics	4
Select one of the following:		
MATH 220	Elementary Statistics	3
MATH 160	Calculus I	3
BUSA 221	Business Statistics	3
Core Requirements		
Credit Hours		23

Junior Year		
Field Elective		
BIOL 320 or BIOL 420	Environmental Issues or Environmental Regulations and Policy	4
GEOL 200	Geology	3
Biology Electives		
Credit Hours		7

Senior Year		
Field Elective		
BIOL 417	Evolution, Creation & Organization of Biology (spring or Junior year spring if Dec. graduation)	3
BIOL 320 or BIOL 420	Environmental Issues or Environmental Regulations and Policy	4
BIOL 425 or BIOL 426	Senior Thesis Literature Review or Sr Thesis Directed Research I	2
GEOL 200	Geology (if not taken)	3
Credit Hours		12
Total Credit Hours		50

The Minor in Biology

Eighteen hours are required for a biology minor with no more than two courses at the 100-level. Recommended courses for each of three minor areas are listed below.

Code	Title	Credit Hours
Select 18 hours from the following areas:		
Social Science		
BIOL 103	General Biology: Earth-Keeping	3
BIOL 151	General Biology I	4
BIOL 233	Human Physiology & Anatomy I	3
BIOL 234	Human Physiology & Anatomy II	3
BIOL 312	Genetics	3
Pre-Medical ¹		
BIOL 151	General Biology I	4
BIOL 152	General Biology II	4
BIOL 216	Introduction to Microbiology	3
BIOL 310	Animal Physiology	3
BIOL 311	Cell Biology	3
BIOL 312	Genetics	3
CHEM 320	Biochemistry I	3
CHEM 322	Biochemistry Laboratory	3
Environmental		
BIOL 103	General Biology: Earth-Keeping	3
BIOL 151	General Biology I	4
BIOL 152	General Biology II	4
BIOL 309W	Ecology	4

BIOL 309L	Ecology Laboratory
BIOL 350A	Entomology
BIOL 350AL	Invertebrate Zoology:entomology Laboratory
BIOL 350B	Vertebrate Zoology
BIOL 350BL	Vertebrate Biology Laboratory
BIOL 350C	Vascular Plants
Au Sable courses	
Total Credit Hours	18

¹ Note that Pre-medical requirements are found here: [/undergraduate/academics/pre-professional-preparation/index.html](https://catalog.eastern.edu/undergraduate/academics/pre-professional-preparation/index.html) (<https://catalog.eastern.edu/undergraduate/academics/pre-professional-preparation/>)

The Minor in Environmental Science

The minor in Environmental Science requires eighteen hours as follows:

Code	Title	Credit Hours
BIOL 151	General Biology I	4
BIOL 309W & BIOL 309L	Ecology and Ecology Laboratory	4
BIOL 320 or BIOL 420	Environmental Issues or Environmental Regulations and Policy	4
Select two Elective courses, one of which must be a field course taught by Eastern or Au Sable Institute		6
Total Credit Hours		18

Editing

Normal text.

Stylize

Stylize

- one
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- b1
 - b2
 - b3

Subheading

Subsubheading

Links

Eastern (<http://www.eastern.edu>)

Undergraduate (<https://catalog.eastern.edu/undergraduate/>)

Info (info@eastern.edu)

BUSA 101 Introduction to Business is a great course.

BIBL 100 Introducing Biblical Literature,Biblical Literature in Contemporary Context

BUSA 102

BUSA 102

BUSA 533

MATH 110

Tables

Date	Event
June 1, 2022	First Day
July 4, 2022	Independence Day
August 15, 2022	Last Day

Demo of tables starts here - Course Lists + Plan of Study

Code	Title	Credit Hours
EDUC 101	(Fall only)	3
BUSA 101	Introduction to Business (Spring only)	3
EDUC 102 & EDUC 130	Test Prep Math and Special Topics	2.5
EDUC 103/ SOCI 220	Test Prep Reading and Writing	1.5
EDUC 200W or EDUC 303		3
EDUC 201	Introduction: Special Education	3
EDUC 230	Special Topics	1-3
EDUC 400	Early Literacy Foundations ¹	3

Major Requirements

Select 2 of the following:		6
EDUC 234	Child and Adolescent Development	
EDUC 235	Urban Education	
EDUC 250	Field Experience	

Total Credit Hours **26-28**

¹ This is my footnote.

Plan of study demo starts here.

Course	Title	Credit Hours
First Year		
Semester 1		
ACCT 106		3
ACCT 107	Principles of Accounting I	3
Credit Hours		6
Semester 2		
ACCT 207	Principles of Accounting I	3
ACCT 208	Principles of Accounting II	3
Credit Hours		6
Sophomore Year		
Semester 1		
ACCT 309	Nonprofit Accounting	3
ACCT 330	Special Topics	1-3
Credit Hours		4-6
Semester 2		
ACCT 361	Intermediate Financial Accounting I	3

ACCT 362	Intermediate Financial Accounting II	3
	Credit Hours	6
	Total Credit Hours	22-24

Shared and Borrowed Content

Original Shared content

Eastern University is a nationally-recognized Christian university offering a wide array of undergraduate, graduate, professional, seminary, and online programs. The university's main campus is located in St. Davids, PA, with additional locations in Philadelphia and Harrisburg. Eastern's core values of faith, reason, and justice are woven into all of its educational programs. Eastern University is affiliated with the American Baptist Churches USA and has an interdenominational Christian student body, faculty and administration.

Display newly created shared content

Eastern University is a nationally-recognized Christian university offering a wide array of undergraduate, graduate, professional, seminary, and online programs. The university's main campus is located in St. Davids, PA, with additional locations in Philadelphia and Harrisburg. Eastern's core values of faith, reason, and justice are woven into all of its educational programs. Eastern University is affiliated with the American Baptist Churches USA and has an interdenominational Christian student body, faculty and administration.

Academic leadership

Borrowed content example