

## **BIOLOGY (BS)**

### **Bachelor of Science (BS)**

This degree map is based on the 2023-24 Academic Catalog and is subject to change. Students should meet with their academic advisor each semester and use Degree Works to monitor their individual progress toward degree completion. The time it takes to earn a degree will vary based on several factors including summer/winter enrollment, dual enrollment and number of courses successfully completed each semester. We recommend taking a minimum of 15 credits each fall and spring semester.

#### **Sample 4-Year Plan**

First Year				
Fall Courses	Credits	Spring Courses	Credits	
BIOL 110 Principles of Biology 1	4	BIOL 111 Principles of Biology 2	4	
CHEM 121 General Chemistry 1	4	CHEM 122 General Chemistry 2	4	
English 101	3	General Education	3	
First year seminar	3	General Education	3	
Semester Total	14	Semester Total	14	

Second Year			
Fall Courses	Credits	Spring Courses	Credits
BIOL 211 Cell Biology	4	BIOL 201 Intro to Biological Research	3
CHEM 281 Organic Chemistry 1 or CHEM 231 Condensed Organic Chemistry	4	BIOL 209 Genetics	3
STAT 141	3	BIOL 210 Genetics Lab (will be optional)	
General Education	3	MATH 150 Essentials of Calculus or MATH 160 Calculus 1	4
		General Education	3
		General Education	3
Semester Total	14	Semester Total	17

Third Year				
Fall Courses	Credits	Spring Courses	Credits	
PHYS 208 Intro to Physics 1 or PHYS 211 General Physics 1	4	BIOL elective	3	
BIOL 301 Ecology	4	BIOL elective	3	
BIOL elective	3	BIOL elective	3	
General Education	3	General Education	3	
General Education	3	General Education	3	
Semester Total	16	Semester Total	15	

Fourth Year				
Fall Courses	Credits	Spring Courses	Credits	
BIOL elective	3	BIOL elective	3	
BIOL elective	3	BIOL elective	3	
BIOL elective	3	Free elective	3	
General Education	3	Free elective	3	
Free elective	3	Free elective	3	
Semester Total	15	Semester Total	15	

#### **Winter/Summer College - Optional**

While not required, Winter and Summer sessions are offered each year and may help you stay on track or get ahead. You may take up to seven (7) credits during Winter College and up to 14 credits during Summer College.

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#### **Curriculum Checklist** Biology Core Requirements (22 credits) BIOL 110 Principles of Biology 1 (4) BIOL 111 Principles of Biology 2 (4) BIOL 201 Intro to Bio Research (3) BIOL 209 Genetics (3) BIOL 211 Cell Biology (4) BIOL 301 Ecology (Fall only) (4) Related Core Requirements (26 credits) CHEM 121 General Chemistry 1 (4) CHEM 122 General Chemistry 2 (4) CHEM 231\* Condensed Organic Chem (4) \_ PHYS 208\*\* Intro to Physics 1 (4) STAT 141 Intro to Statistics (3) MATH 150\*\*\* Essentials of Calculus (3) \*Can substitute CHEM 281 Organic Chemistry \*\*Can substitute PHYS 211 General Physics 1 \*\*\*Can substitute MATH 160 Calculus 1 Electives (30 credits) Choose 8-10 courses at 200-level or above; \*at least four electives must have a lab; at least 20 credits must come from courses that are at the 300-level or above; maximum of 6 credits of BIOL 493 or BIOL 498 can be used - these experiences do not count as "course with a lab". \*designates course with a lab \*BIOL 206 Botany (3) \*BIOL 207 Zoology (3) BIOL 208 Human Genetics (3) \*BIOL 210 Genetics Laboratory (1) BIOL 213 Intro to Parasitology (3) \*BIOL 215 Investigations in Genetics and Molecular Biology (2) \*BIOL 252 Watershed Ecology Tech (3) \*BIOL 314 Comparative Bio of Inverts (3) \*BIOL 315 Comparative Vert. Anat. (3) \*BIOL 316 Vertebrate Histology (3) BIOL 337 Basic Virology (3) \*BIOL 340 Microbiology (4) \*BIOL 354 Medical Microbiology (3) BIOL 350 Plant Pathology (3) \*BIOL 400 Dendrology (3) \*BIOL 401 Entomology (3) \*BIOL 419 Ecosystems (3) BIOL 420 Global Change Bio (3) BIOL 430 Evolution (3) \_ \*BIOL 431 Mycology (3) \*BIOL 432 Ornithology (3) \*BIOL 433 Ichthyology (3) \*BIOL 434 Herpetology (3) BIOL 435 Conservation Genetics (3) BIOL 438 Environmental Policies (3) \*BIOL 439 Hum Dim in Fisheries Mg (3) \_ \*BIOL 440 Mg of Sm. Impoundments (3) \*BIOL 441 Mg of Lg Impoundments (3) BIOL 442 Advanced Virology (3) BIOL 443 Molecular Biology (3) \*BIOL 444 Molecular Biology lab (1) BIOL 445 Pharmacology (3) BIOL 446 Immunology (3) \_ \*BIOL 447 Immunology lab (1) \*BIOL 448 Advanced Parasitology (3) \*BIOL 450 Developmental Biology (3) BIOL 451 Conservation Biology (3) \*BIOL 452 Freshwater Ecology (3) \*BIOL 453 Freshwater Entomology (3) \*BIOL 454 Algae of Freshwater Eco (3) \*BIOL 455 Community Ecology (3) BIOL 456 Enviro Toxicology (3) \*BIOL 460 Plants, Animals, Nat. His. of PA (3) \*BIOL 461 Animal Behavior (3) BIOL 462 Cancer Biology (3) BIOL 465 Medical Genomics (3) BIOL 466 Bioinformatics (3) \*BIOL 470 Tissue Culture (1)

BIOL 473 Environmental Physiology (3) BIOL 474 Human Physiology (3) BIOL 475 Animal Cell Physiology (3)







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#### Electives cont. (30 credits)

Choose 8-10 courses at 200-level or above; \*at least four electives must have a lab; at least 20 credits must come from courses that are at the 300-level or above; maximum of 6 credits of BIOL 493 or BIOL 498 can be used – these experiences do not count as "course with a lab". \*designates course with a lab

uv	. designates course with a lab
	BIOL 476 Neurophysiology (3)
	BIOL 477 Plant Physiology (3)
	BIOL 479 Comparative Animal Physiology (3)
	*BIOL 480 Integrated Physiology lab (1)
	BIOL 485 Senior Seminar (1)
	BIOL 486 Analysis & Comm of Bio Data (3)
	BIOL 489 Special Topics in Biology (3)
	BIOL 493 Independent Research (1-6 crs)
	BIOL 498 Internship in Biology (3-6 crs)

# General Education Requirements (45 credits)

Note: Some requirements may be fulfilled by coursework in your major program including directed Gen Ed courses noted below

- Foundations (15 credits)
  - MATH 150; MATH 160; STAT 141 (3)
- Interconnections (9 credits)
- Citizenship & Responsibility
  (6 credits from at least two goals)
  - Natural World & Technologies (9 credits)
    - o BIOL110 Principles of Biology I (4)
    - o CHEM 121 General Chemistry 1 (4)
    - o PHYS 208 Intro to Physics I (4)
- Creativity & Expression (6 credits)

#### **Degree Requirements**

All students must obtain a minimum of 120 credits, complete all General Education requirements, and all requirements for the selected major. Meet with your advisor and consult Degree Works to monitor your progress and for all graduation requirements.

A minimum GPA of 2.0 in the major and overall are required.

#### **Campus Locations**

Bloomsburg	$\square$ Online;	$\ oxdot$ In-person;	☐ Blended
Lock Haven	$\square$ Online;	$ extrm{$oxed{\boxtimes}$}$ In-person;	☐ Blended
Mansfield	$\square$ Online;	$ extrm{$oxed{\boxtimes}$}$ In-person;	☐ Blended
Clearfield	$\square$ Online;	$\square$ In-person;	☐ Blended

Revised April, 2023