

BIOMEDICAL SCIENCES (PRE-MEDICAL SCIENCES)

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	PSYC 100 Introduction to Psychology	3
MATH 160 Calculus 1 or MATH 150 Essentials of Calculus	3	CHEM 121 General Chemistry 1	4
FYS	3	Gen Ed	3
Gen Ed	3	BIOL 111 Principles of Biology 2	4
Gen Ed	3		
Semester Total	16	Semester Total	14
Second Year			
Fall Courses	Credits	Spring Courses	Credits
CHEM 122 General Chemistry 2	4	BIOL 208 Human Genetics or BIOL 209 Genetics	3
SOCI 101 Principles of Sociology	3	CHEM 281 Organic Chemistry 1	4
BIOL 211 Cell Biology	4	Biomedical Sciences Elective	3
Gen Ed	3	Gen Ed	3
		Gen Ed	3
Semester Total	14	Semester Total	16
Third Year			
Fall Courses	Credits	Spring Courses	Credits
BIOL 340 Microbiology	4	BIOL 474 Human Physiology	3
Gen ed	3	CHEM 351 Biochemistry	4
CHEM 282 Organic Chemistry 2	4	BIOL 310 Biomedical Sciences Seminar	1
PHYSICS 208 Intro Physics 1	4	PHYSICS 209 Intro Physics 2	4
		Gen Ed	3
Semester Total	15	Semester Total	15
Fourth Year			
Fall Courses	Credits	Spring Courses	Credits
Biomedical Sciences Elective	3	Biomedical Sciences Elective	3
Biomedical Sciences Elective	3	Biomedical Sciences Elective	3
Gen Ed	3	Biomedical Sciences Elective	3
Gen Ed	3	Gen Ed	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 (23 credits)

- ___ BIOL 110 Principles of Biology 1 (4)
- ___ BIOL 111 Principles of Biology 2 (4)
- ___ BIOL 208 Human Genetics (3) OR BIOL 209 Genetics (3)
- ___ BIOL 211 Cell Biology (4)
- ___ BIOL 340 Microbiology (4)
- ___ BIOL 474* Human Physiology (3)
- ___ PMSS 300 Pre-Medical Sci Seminar (1)

*Can substitute BIOL 437;475; 476; 477; 478; 479

Related Core Requirements (37 credits)

- ___ CHEM 121 General Chemistry 1 (4)
- ___ CHEM 122 General Chemistry 2 (4)
- ___ CHEM 281 Organic Chemistry 1 (4)
- ___ CHEM 282 Organic Chemistry 2 (4)
- ___ CHEM 351 Biochemistry (4)
- ___ PHYS 208 Intro to Physics 1 (4)
- ___ PHYS 209 Intro to Physics 2 (4)
- ___ MATH 150** Essentials of Calculus (3) OR STAT 141 Intro to Statistics (3)
- ___ PSYC 100 Intro to Psychology (3)
- ___ SOCI 101 Intro to Sociology (3)

**Can Substitute MATH 160 Calculus 1

Electives (18 credits)

At least 15 credits must be at the 300-level or above. If BIOL 474; 475; 476; 477 or 479 is used to fulfill core requirements it cannot be used to fulfill elective requirements. If BIOL 208 is used to fill the core; BIOL 209 can be taken as an elective

- ___ BIOL 206 Botany (3)
- ___ BIOL 207 Zoology (3)
- ___ BIOL 209 Genetics (3)
- ___ BIOL 210 Genetics Laboratory (1)
- ___ BIOL 213 Intro to Parasitology (3)
- ___ BIOL 215 Investigations in Genetics and Molecular Biology (2)
- ___ BIOL 301 Ecology (4)
- ___ BIOL 314 Comparative Bio of Inverts (3)
- ___ BIOL 315 Comparative Vert. Anat. (3)
- ___ BIOL 316 Vertebrate Histology (3)
- ___ BIOL 337 Basic Virology (3)
- ___ BIOL 354 Medical Microbiology (3)
- ___ BIOL 350 Plant Pathology (3)
- ___ BIOL 400 Dendrology (3)
- ___ BIOL 401 Entomology (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 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 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 476 Neurophysiology (3)
- ___ BIOL 477 Plant Physiology (3)
- ___ BIOL 479 Comparative Animal Physiology (3)

Electives cont. (18 credits)

At least 15 credits must be at the 300-level or above. If BIOL 474; 475; 476; 477 or 479 is used to fulfill core requirements it cannot be used to fulfill elective requirements. If BIOL 208 is used to fill the core; BIOL 209 can be taken as an elective

- ___ 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)
 - STAT 141 (3) OR MATH 150 (3)
- Interconnections (9 credits)
- Citizenship & Responsibility (6 credits from at least two goals)
- Natural World & Technologies (9 credits)
 - BIOL110 Principles of Biology 1 (4)
 - CHEM 121 General Chemistry 1 (4)
 - PHYS 208 Intro to Physics 1 (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 | <input type="checkbox"/> Online; <input checked="" type="checkbox"/> In-person; <input type="checkbox"/> Blended |
| Lock Haven | <input type="checkbox"/> Online; <input checked="" type="checkbox"/> In-person; <input type="checkbox"/> Blended |
| Mansfield | <input type="checkbox"/> Online; <input checked="" type="checkbox"/> In-person; <input type="checkbox"/> Blended |