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

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<tr>
<th>First Year</th>
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<tr>
<td>Fall Courses</td>
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<td>BIOL 110 Principles of Biology 1</td>
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<td>PSYC 100 Introduction to Psychology</td>
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<td>CHEM 122 General Chemistry 2</td>
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<td>BIOL 208 Human Genetics or BIOL 209 Genetics</td>
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<td>SOCI 101 Principles of Sociology</td>
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<td>CHEM 281 Organic Chemistry 1</td>
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<td>CHEM 351 Biochemistry</td>
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<td>BIOL 310 Biomedical Sciences Seminar</td>
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**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.

Revised June, 2023
**BIOMEDICAL SCIENCES (PRE-MEDICAL SCIENCES)***

**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 350 Plant Pathology (3)
- BIOL 400 Dentrology (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 Physiol (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)
    - BIOL 110 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**
  - Online; In-person; Blended
- **Lock Haven**
  - Online; In-person; Blended
- **Mansfield**
  - Online; In-person; Blended

Revised June, 2023