College of Health, Science and Technology
Department of Biological and Health Sciences

Bloomsburg LOCK HAVEN MANSFIELD
COMMONWEALTH UNIVERSITY

BIOMEDICAL SCIENCES GENERAL

Bachelor of Science (BS) – Biomedical Sciences

This degree map is based on the current Academic Catalog and is subject to change. Please note that the degree map is designed to give you a sense of roughly how courses might be distributed over a 4-year degree. Your exact schedule will differ depending on a range of factors though we recommend taking a minimum of 15 credits each fall and spring semester. Regular consultation with your academic advisor is the best way to make sure that you are taking the courses you need in the right order to ensure efficient progress through your degree program.

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
MATH 118 College Algebra or MATH 140 Pre-Calculus or MATH 150 Essentials of Calculus	3	CHEM 121 General Chemistry 1	4
FYS 100 First Year Seminar	3	WRIT 103 Foundations in Composition	3
General education	3	General education	3
General education	3		
Semester Total	16	Semester Total	14

Second Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
BIOL 180 Anatomy and Physiology 1	4	BIOL 181 Anatomy and Physiology 2	4
CHEM 122 General Chemistry 2	4	BIOL 211 Cell Biology	4
STAT 141 Introduction to Statistics	3	Biomedical Science Elective	3
General education	3	General Education	3
Free elective	1	Free Elective	3
Semester Total	15	Semester Total	17

Third Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
BIOL 340 Microbiology	4	BIOL 310 Biomedical Sciences Seminar	1
BIOL 208 Human Genetics or BIOL 209 Genetics	3	BIOL 443 Molecular Biology	3
Biomedical Sciences Elective	3	Biomedical Science Elective	3
Biomedical Sciences Elective	3	General education	3
General education	3	Free Elective	3
Semester Total	16	Semester Total	13

Fourth Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
Biomedical Sciences elective	3	Biomedical Science Elective	3
Biomedical Sciences Elective	3	Biomedical Science Elective	3
Biomedical Sciences Elective	3	Biomedical Science 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 (31 credits)

___ BIOL 110 Principles of Biology 1 (4)
___ BIOL 111 Principles of Biology 2 (4)
___ BIOL 180 Anatomy and Physiology 1 (4)
___ BIOL 181 Anatomy and Physiology 2 (4)
___ BIOL 208 Human Genetics (3) OR BIOL 209 Genetics (3)*
___ BIOL 211 Cell Biology (4)*
___ BIOL 310 Biomedical Sci Seminar (1)*
___ BIOL 340 Microbiology (4)*
___ BIOL 443 Molecular Biology (3)*

Related Core Requirements (14 credits)

___ CHEM 121 General Chemistry 1 (4)^
___ CHEM 122 General Chemistry 2 (4)*
___ STAT 141 Intro to Statistics (3)
___ MATH 118 College Algebra (3) OR MATH 140 Pre-Calculus (3)^ OR MATH 150 Essentials of Calculus (3)^

Electives (30 credits)

At least twenty-four credits at the 300 level or above. If BIOL 208 is taken to fill the core, then BIOL 209 can be taken as an elective. A maximum of 8 credits in CHEM/PHYS courses can count as electives.

___ 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 Investigation 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 444 Molecular Biology lab (1)*
___ BIOL 445 OR HLSC 415 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 Physio (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) (3)*
___ BIOL 498 Internship in Biology (3-6 crs) (3)*
___ HLSC 407 Advanced Human Physiology (4)*
___ HLSC 451 Advanced Human Anatomy (3)*
___ CHEM 231 Condensed Organic Chemistry (4)*
___ CHEM 281 Organic Chemistry 1 (4)*
___ CHEM 282 Organic Chemistry 2 (4)*
___ CHEM 351 Biochemistry 1 (4)*
___ PHYS 208 Introductory Physics 1 (4)*
___ PHYS 209 Introductory Physics 2 (4)*
___ PHYS 211 General Physics 1 (4)*
___ PHYS 212 General Physics 2 (4)*

^ Enrollment in course is contingent on an ALEKS math placement score >61 or successful completion of MATH118 College Algebra with a grade of C or better.

Note: Progression through the sequence of all chemistry courses requires achievement of a minimum grade of C in pre-requisite courses.

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)
- Interconnections (9 credits)
- Citizenship & Responsibility
  (6 credits from at least two goals)
- Natural World & Technologies (9 credits)
  - BIOL110 Principles of Biology 1 (4)
  - BIOL 180 Anatomy and Physiology 1 (4)
  - CHEM 121 General Chemistry 1 (4)
- Creativity & Expression (6 credits)

Degree Requirements

All students must obtain a minimum of 120 credits (A minimum of 42 credits must be advanced course work), 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.

*Denotes advanced coursework

Students must take a minimum of 42 credits of advanced coursework. Advanced coursework can be met in major courses, minor courses, free elective courses, and general education courses. Courses that meet this requirement are designated in Banner.

Campus Locations

Bloomsburg	☐ Online;	☒ In-person;	☐ Blended
Lock Haven	☐ Online;	☒ In-person;	☐ Blended
Mansfield	☐ Online;	☒ In-person;	☐ Blended

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