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

Bloomsburg LOCK HAVEN MANSFIELD
COMMONWEALTH UNIVERSITY

PRE-PHARMACY

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
CHEM 121 General Chemistry 1	4	CHEM 122 General Chemistry 2	4
FYS 100 First Year Seminar	3	STAT 141 Introduction to Statistics	3
SOCI 101 Introduction to Sociology	3	WRIT 103 Foundations in Composition	3
Semester Total	14	Semester Total	14

Second Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
BIOL 211 Cell Biology	4	BIOL 340 Microbiology	4
CHEM 281 Organic Chemistry 1	4	CHEM 282 Organic Chemistry 2	4
MATH 160 Calculus 1	4	COMM 102 Interpersonal Communication OR COMM 103 Sm. Group Communication	3
PSCY 100 Intro to Psychology	3	BIOL 209 Genetics	3
		General Education	1
Semester Total	15	Semester Total	15

Third Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
BIOL 180 Anatomy and Physiology 1	4	BIOL 181 Anatomy and Physiology 2	4
BIOL 301 Biomedical Sciences Seminar	1	PHYS 209 Introduction to Physics 2	4
CHEM 351 Biochemistry	4	*ECON 122 Macroeconomics (ECON 121 can be substituted)	3
PHYS 208 Introduction to Physics 1	4	General Education	3
General Education	2	General Education	3
Semester Total	15	Semester Total	17

*Fourth Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
Biomedical Sciences Elective	3	Biomedical Sciences Elective	3
Biomedical Sciences Elective	3	Biomedical Sciences Elective	1
Free Elective	3	Free Elective	3
Free Elective	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.

*Students wishing to take advantage of one of the 3+4 agreements Commonwealth University has with several different PharmD programs, must follow this 4-year plan. In the 4th year, the student begins their PharmD program at an affiliated institution.

Revised February 2025

PRE-PHARMACY

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Curriculum Checklist

Biology Core Requirements (28 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)*

Related Core Requirements (50 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)*
___ MATH160 Calculus 1 (4)^
___ STAT 141 Intro to Statistics (3)
___ COMM 102 Interpersonal Communication (3) OR COMM 103 Sm. Group Communication (3)
___ ECON 121 Principles of Macroeconomics (3) (ECON 122 can be substituted)
___ PSCY 101 Introduction to Psychology (3)
___ SOCI 101 Introduction to Sociology (3)
___ WRIT 103 Foundations in Composition (3)

Electives (10 credits)

At least 9 credits must be 300-level or above.
If BIOL 208 is used to fill the core BIOL 209 can be used as an elective.

___ 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 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 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 350 Plant Pathology (3)*
___ BIOL 400 Dendrology (3)*
___ BIOL 401 Entomology (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 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 475 Animal Cell Physiology (3)*

Electives cont. (10 credits)

At least 9 credits must be 300-level or above.
If BIOL 208 is used to fill the core BIOL 209 can be used as an elective.

___ 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)*
___ BIOL 498 Internship in Biology (3-6 crs)*

^ 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

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)
  - WRIT 103 Foundations in Composition (3)
  - COMM 102 Interpersonal Communication (3) OR COMM 103 Sm. Group Communication (3)
  - STAT 141 Intro to Statistics (3)
- Interconnections (9 credits)
  - ECON 121 (Global Perspectives) (3)
- Citizenship & Responsibility
  (6 credits from at least two goals)
  - SOCI 101 Introduction to Sociology (3)
- 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