College of Science and Technology
Physical and Environmental Sciences: Biochemistry, Chemistry, Engineering, Geography, Geology, and Physics

Bloomsburg LOCK HAVEN MANSFIELD
COMMONWEALTH UNIVERSITY

CHEMISTRY BS - PRE-MEDICINE (ASBMB)

Bachelor of Science (BS)

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. *Chemistry degrees are offered on a 1+3 basis at Lock Haven and Mansfield campuses*.

Sample 4-Year Plan

First Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
MATH160 Calculus I (General Education)	4	MATH170 Calculus 2	4
CHEM121 General Chemistry 1 (General Education)	4	CHEM122 General Chemistry 2 (General Education)	4
General Education Course	3	PHYS211 General Physics 1 (General Education)	4
General Education Course -- First Year Seminar	3	General Education Course	3
Semester Total	14	Semester Total	15

Second Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
CHEM281 Organic Chemistry 1	4	CHEM282 Organic Chemistry 2	4
PHYS212 General Physics 2	4	CHEM261 Inorganic Chemistry	4
General Education Course	3	Free Elective	3
BIOL110 Principles in Biology 1	4	General Education Course	3
		Free Elective	3
Semester Total	15	Semester Total	17

Third Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
CHEM341 Quantitative Analysis	4	CHEM452 Biochemistry 2	4
CHEM351 Biochemistry 1	4	BIOL209 Genetics	3
General Education Course	3	BIOL210 Genetics Lab	1
Free Elective	3	General Education Course	3
Free Elective	3	General Education Course	3
Semester Total	17	Semester Total	14

Fourth Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
CHEM371 Physical Chemistry 1	4	Free Elective	4
CHEM Elective	3	CHEM Research or Internship	1
General Education Course	3	General Education Course	3
Biology Elective	3	Biology Elective	3
Free Elective	3	Free Elective	1
Semester Total	16	Semester Total	12

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 May 2026

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Curriculum Checklist

Fall 2023f Commonwealth Course Name

___ CHEM121 General Chemistry 1 (N) (4)
___ CHEM122 General Chemistry 2 (N) (4)*
___ CHEM281 Organic Chemistry 1 (4)*
___ CHEM282 Organic Chemistry 2 (4)*
___ CHEM261 Inorganic Chemistry (4)*
___ CHEM341 Quantitative Analysis (4)*
___ CHEM371 Physical Chemistry 1 (4)*
___ CHEM351 Biochemistry 1 (4)*
___ CHEM452 Biochemistry 2 (4)*
___ MATH160 Calculus 1 (Q) (4)*
___ MATH170 Calculus 2 (4)*
___ PHYS211 General Physics 1 (N) (4)
___ PHYS212 General Physics 2 (4)*
___ BIOL110 Principles in Biology 1 (4)
___ BIOL209 Genetics (3)*
___ BIOL210 Genetics Lab (1)*
___ PMSS300 Pre-Medical Sciences Studies Seminar (1)*
___ PSYC100 Intro to Psychology (3)
___ SOCI101 Intro to Sociology (R) (3)

Fall 2023f Commonwealth Elective Courses

Category A (1 credit)
___ CHEM492 Chemistry Research 1 (1)*
___ CHEM498 Chemistry Internship (1)*

Category B (4 credits)
___ CHEM442 Instrumental Analysis (4)*
___ CHEM472 Physical Chemistry 2 (4)*
___ CHEM462 Advanced Inorganic Chemistry (4)*

Category C (6 credits)
___ BIOL211 Cell Biology (4)*
___ BIOL337 Basic Virology (3)*
___ BIOL340 Microbiology (4)*
___ BIOL350 Plant Pathology (4)*
___ BIOL411 Radiation Biology (4)*
___ BIOL430 Evolution (4)*
___ BIOL431 Mycology (4)*
___ BIOL442 Advanced Virology (4)*
___ BIOL443 Molecular Biology (4)*
___ BIOL444 Molecular Biology Lab (4)*
___ BIOL445 Pharmacology (4)*
___ BIOL446 Immunology (4)*
___ BIOL450 Developmental Biology (4)*
___ BIOL462 Cancer Biology (4)*
___ BIOL465: Medical Genomics (4)*
___ BIOL466 Bioinformatics (4)*
___ BIOL474 Human Physiology (4)*
___ BIOL475 Animal Cell Physiology (4)*
___ BIOL476 Neurophysiology (4)*
___ BIOL477 Plant Physiology (4)*
___ BIOL489 Special Topics in Biology (4)*

*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.

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)
  - FYS (U): FYS100 First Year Seminar
  - Writing (W):
  - Oral Comm. (O):
  - Quantitative (Q): MATH160 Calculus 1
  - History (H):
- Interconnections (9 credits)
  - Diversity (D):
  - Global Perspectives. (G):
  - D or G or Foreign Lang. (F):
- Citizenship & Responsibility
  (6 credits from at least two goals)
  - Goal 1: Citizenship (S):
  - Goal 2 Ethical Reasoning (E):
  - Goal 3: Crit. Reasoning (R): SOCI101 Intro to Soc
- Natural World & Technologies (9 credits)
  - Natural World (N): CHEM121 General Chemistry 1
  - Natural World (N): CHEM122 General Chemistry 2
  - Technology (T): PHYS211 General Physics 1
- Creativity & Expression (6 credits)
  - Literature (L):
  - Arts (A) or Creativity (C):

Degree Requirements

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

Chemistry degrees are offered on a 1+3 basis at Lock Haven and Mansfield campuses.

The Chemistry minor and any service courses for other majors are available at all campuses, as needed. Students interested in pursuing a Chemistry major may do so by transferring to the Bloomsburg campus. We will maintain the first-year of the Chemistry program at all campuses to provide students with the opportunity to explore the field and potentially develop a passion for it.