

# CHEMISTRY BS - BIOCHEMISTRY (ASBMB)

## 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
MATH 160 Calculus 1 (General Education)	4	MATH 170 Calculus 2	4
CHEM 121 General Chemistry 1 (General Education)	4	CHEM 122 General Chemistry 2 (General Education)	4
General Education Course	3	PHYS 211 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
CHEM 281 Organic Chemistry 1	4	CHEM 282 Organic Chemistry 2	4
PHYS 212 General Physics 2	4	CHEM 261 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
CHEM 341 Quantitative Analysis	4	CHEM 452 Biochemistry 2	4
CHEM 351 Biochemistry 1	4	BIOL 209 Genetics	3
General Education Course	3	BIOL 210 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
CHEM 371 Physical Chemistry 1	4	CHEM 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.

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## Curriculum Checklist

### Fall 2023 Commonwealth Courses (60 credits)

- \_\_\_ CHEM 121 General Chemistry 1 (N) (4)
- \_\_\_ CHEM 122 General Chemistry 2 (N) (4)
- \_\_\_ CHEM 281 Organic Chemistry 1 (4)
- \_\_\_ CHEM 282 Organic Chemistry 2 (4)
- \_\_\_ CHEM 261 Inorganic Chemistry (4)
- \_\_\_ CHEM 341 Quantitative Analysis (4)
- \_\_\_ CHEM 371 Physical Chemistry 1 (4)
- \_\_\_ CHEM 351 Biochemistry 1 (4)
- \_\_\_ CHEM 452 Biochemistry 2 (4)
- \_\_\_ MATH 160 Calculus 1 (Q) (4)
- \_\_\_ MATH 170 Calculus 2 (4)
- \_\_\_ PHYS 211 General Physics 1 (N) (4)
- \_\_\_ PHYS 212 General Physics 2 (4)
- \_\_\_ BIOL 110 Principles in Biology 1 (4)
- \_\_\_ BIOL 209 Genetics (3)
- \_\_\_ BIOL 210 Genetics Lab (1)

### Fall 2023 Commonwealth Elective Courses

#### A. Category A (1 Credit)

- \_\_\_ CHEM 492 Chemistry Research 1 (1)
- \_\_\_ CHEM 498 Chemistry Internship (1)

#### B. Category B (8 Credits)

- \_\_\_ CHEM 442 Instrumental Analysis (4)
- \_\_\_ CHEM 472 Physical Chemistry 2 (4)
- \_\_\_ CHEM 462 Advanced Inorganic Chemistry (4)

#### C. Category C (6 Credits)

- \_\_\_ BIOL 211 Cell Biology (4)
- \_\_\_ BIOL 337 Basic Virology (3)
- \_\_\_ BIOL 340 Microbiology (4)
- \_\_\_ BIOL 350 Plant Pathology (3)
- \_\_\_ BIOL 411 Radiation Biology (3)
- \_\_\_ BIOL 430 Evolution (3)
- \_\_\_ BIOL 431 Mycology (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 450 Developmental Biology (3)
- \_\_\_ BIOL 462 Cancer Biology (3)
- \_\_\_ BIOL 465 Medical Genomics (3)
- \_\_\_ BIOL 466 Bioinformatics (3)
- \_\_\_ BIOL 474 Human Physiology (3)
- \_\_\_ BIOL 475 Animal Cell Physiology (3)
- \_\_\_ BIOL 476 Neurophysiology (3)
- \_\_\_ BIOL 477 Plant Physiology (3)
- \_\_\_ BIOL 489 Special Topics in Biology (3)

## 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):
- 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, 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

- |                   |  |
|-------------------|--|
| <b>Bloomsburg</b> | <input type="checkbox"/> Online; <input checked="" type="checkbox"/> In-person; <input type="checkbox"/> Blended |
| <b>Lock Haven</b> | <input type="checkbox"/> Online; <input checked="" type="checkbox"/> In-person; <input type="checkbox"/> Blended |
| <b>Mansfield</b>  | <input type="checkbox"/> Online; <input checked="" type="checkbox"/> In-person; <input type="checkbox"/> Blended |
| <b>Clearfield</b> | <input type="checkbox"/> Online; <input type="checkbox"/> In-person; <input type="checkbox"/> Blended            |