

# MATHEMATICS

## 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

\*\*\*Students starting with College Algebra or Precalculus should consult with their advisors to adjust the course sequence.

First Year			
Fall Courses	Credits	Spring Courses	Credits
MATH 160 - Calculus I (Quantitative General Education)	4	MATH 170 - Calculus 2	4
CMSC 115 - Python Programming (Technology General Education)	3	MATH 250 - Discrete Math (Critical Reasoning General Education)	3
Oral Communications General Education	3	History General Education Course	3
General Education Course -- First Year Seminar	3	Writing General Education Course	3
General Education Course (D, G or F)	3	Arts or Creative General Education	3
Semester Total	16	Semester Total	16

Second Year			
Fall Courses	Credits	Spring Courses	Credits
MATH 270 - Calculus 3	4	MATH 340 - Linear Algebra	3
MATH Elective	3	STAT 241 - Probability and Statistics	3
Natural World General Education	3	Natural World General Education	3
General Education Course (D, G or F)	3	General Education Course (D, G or F)	3
Literature General Education Course	3	Elective	3
Semester Total	16	Semester Total	15

Third Year			
Fall Courses	Credits	Spring Courses	Credits
MATH 480 - Abstract Algebra	3	MATH 482 - Real Analysis	3
MATH Elective	3	MATH Elective	3
General Education Course (S or E)	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Semester Total	15	Semester Total	15

Fourth Year			
Fall Courses	Credits	Spring Courses	Credits
MATH Elective	3	MATH Elective	3
MATH Elective	3	MATH Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3		
Semester Total	15	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.

## Curriculum Checklist

### Fall 2023 Commonwealth Courses (30 credits)

- \_\_\_ MATH 160 Calculus 1 (4)
- \_\_\_ MATH 170 Calculus 2 (4)
- \_\_\_ MATH 250 Discrete Mathematics (3)
- \_\_\_ MATH 270 Calculus 3 (4)
- \_\_\_ STAT 241 Probability and Statistics (3)
- \_\_\_ MATH 340 Linear Algebra (3)
- \_\_\_ MATH 480 Abstract Algebra (3)
- \_\_\_ MATH 482 Real Analysis 1 (3)
- \_\_\_ CMSC 115 Python Programming (or CMSC 120 Introduction to OOP Programming with Java) (3)

### Fall 2023 Commonwealth Elective Math Courses (21 credits required)

#### A. Category A (Choose 12 to 18 credits)

##### Required (12-18 Credits)

- \_\_\_ MATH 260 College Geometry (3)
- \_\_\_ MATH 350 Combinatorics and Graph Theory (3)
- \_\_\_ MATH 355 Coding Theory and Cryptology (3)
- \_\_\_ MATH 360 Modern Geometry (3)
- \_\_\_ MATH 370 Differential Equations (3)
- \_\_\_ MATH 380 Number Theory (3)
- \_\_\_ MATH 440 Theory of Computation (3)
- \_\_\_ MATH 484 Partial Differential Equations (3)
- \_\_\_ MATH 486 Complex Variables (3)
- \_\_\_ MATH 488 Introduction to Topology (3)
- \_\_\_ MATH 490 Abstract Algebra 2 (3)
- \_\_\_ MATH 492 Real Analysis 2 (3)

#### B. Category B (3 to 9 credits)

##### Required (3-9 Credits)

- \_\_\_ MATH 220 History of Mathematics (3)
- \_\_\_ MATH 401 Financial Mathematics for Actuarial Science (3)
- \_\_\_ MATH 402 Probability Theory for Actuarial Science (3)
- \_\_\_ MATH 410 Math Modeling (3)
- \_\_\_ STAT 240 Statistical Methods (3)
- \_\_\_ A second programming course may be counted as one of the electives in category B. Either DATS 110, CMSC 130, CMSC 215, DATS 310 may be used. (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)
  - MATH 160 Calculus I
- Interconnections (9 credits)
- Citizenship & Responsibility (6 credits from at least two goals)
  - MATH 250 Discrete Math
- Natural World & Technologies (9 credits)
  - CMSC 115 – Python Programming (3 Credits) OR  
CMSC 120 OOP with Java (4 Credits)
- 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

- |                   |  |
|-------------------|--|
| <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            |