College of Health, Science and Technology
Department of Mathematics, Computer Science, Digital Forensics

Bloomsburg LOCK HAVEN MANSFIELD
COMMONWEALTH UNIVERSITY

Applied Computer Science - Data Science

Bachelor of Science (BS)

This degree map is based on the 2025-26 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**
CMSC 100 – Fundamentals of Computing	3	CMSC 215 – Advanced Python	3
CMSC 115 – Python Programming	3	CMSC 125 – Fundamentals of Web Development	3
COMM 101 – Public Speaking (Oral Communications General Education)	3	DATS 110 – Introduction to Data Science	3
STAT 141 – Intro to Statistics (Quantitative GenEd)	3	General Education Course (D, G, or F)	3
General Education Course – First Year Seminar	3	Writing General Education Course	3
Semester Total	15	Semester Total	15

Second Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
CMSC 120 – OOP with Java (Technology Gen. Ed.)	4	CMSC 130 – Graphical User Interfaces in Java	4
CMSC 150 – Principles of Database Design	3	DGFR 275 – Introduction to Networks	3
DATS 210 – Data Visualization	3	General Education Course (D, G, or F)	3
History General Education Course	3	General Education Course (D, G, or F)	3
Natural World General Education Course	3	Natural World General Education Course	3
Semester Total	16	Semester Total	16

Third Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
MATH 230 – Discrete Structures	3	CMSC 250 – Operating System	3
CMSC 320 – Computer Ethics Social Impact and Security	3	DATS 410 – Machine Learning	3
Concentration Elective 1	3	Concentration Elective 2	3
Literature General Education Course	3	Critical Reasoning General Education Course	3
Elective	3	Elective	3
Semester Total	15	Semester Total	15

Fourth Year			
Fall Courses	**Credits**	**Spring Courses**	**Credits**
DATS 420 – Advanced Data Science	3	CMSC 480 – Software Engineering	4
Arts or Creative General Education	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3		
Semester Total	15	Semester Total	13

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

Core Courses (35 credits) – All Concentrations

___ CMSC 100 – Fundamentals of Computing (3)
___ CMSC 115 – Python Programming (3)
___ CMSC 125 – Fundamentals of Web Development (3)
___ CMSC 150 – Principles of Database Design (3)
___ CMSC 250 – Operating System (3)
___ DGFR 275 – Introduction to Networks (3)*
___ CMSC 320 – Computer Ethics, Social Impact & Security (3)*
___ DATS 110 – Introduction to Data Science (3)
___ CMSC 130 – GUI in Java (4)
___ CMSC 480 – Software Engineering (4)*
___ MATH 230 – Discrete Structures (3)*

Data Science Concentration (18 credits)

___ CMSC 215 – Advanced Python (3)*
___ DATS 210 – Data Visualization (3)
___ DATS 410 – Machine Learning (3)*
___ DATS 420 – Advanced Data Science (3)*
___ Elective - Any CMSC or DATS course numbers 200 or above (3)
___ Elective – Any CMSC or DATS course numbers 200 or above (3)

*Denotes advanced coursework
Students must take a minimum of 42 credits of advanced coursework to complete their undergraduate degree. 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)
  - STAT 141 Introduction to Statistics (3)
  - COMM 101 Public Speaking (3)
- Interconnections (9 credits)
- Citizenship & Responsibility
  (6 credits from at least two goals)
- Natural World & Technologies (9 credits)
  - CMSC 120 – OOP with Java (4)
- 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

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