Major Program Guide For: B.S. in Mathematics
Concentration: Data Science
Suggested Course Sequence
(Updated January 9, 2023)

- Total Hours for Degree: 120
- This sequence assumes that students begin in Calculus I.
- Students may finish earlier if they attend summer school at WCU or another approved institution.

Freshman Year				
Fall	**17**	**Spring**		**17**
CS 150: Problem Solving & Programming I	4	CS 151: Problem Solving & Programming II		4
MATH 153: Calculus I	4	MATH 255: Calculus II		4
First-Year Seminar (consider MATH 19x or CS 191)	3	COMM 201: Foundations of Communication		3
Liberal Studies	3	ENGL 101: Writing and Rhetoric		3
Liberal Studies	3	Liberal Studies		3

NOTE: If a student is not beginning in Calculus I, see the department for a revised course sequence. General Electives must include a major or minor in another related field.

Sophomore Year				
Fall	**16**	**Spring**		**15**
MATH 250: Introduction to Logic & Proof	3	MATH 310: Discrete Structures		3
MATH 256: Calculus III	4	Data Science Elective		3
MATH 270: Statistical Methods I	3	ENGL 202: Writing and Critical Inquiry		3
Liberal Studies	3	Liberal Studies		3
Liberal Studies	3	Liberal Studies		3

Junior Year				
Fall	**15**	**Spring**		**15**
MATH 362: Linear Algebra I	3	MATH 472 Data Science/MATH 474 Stat. Modeling		3
MATH 475: Stat. Mach. Learning/Data Sci. Elective	3	Data Science Elective		3
Liberal Studies	3	General Elective		3
Liberal Studies	3	General Elective		3
General Elective	3	General Elective		3

Upper Level Perspective (ULP): An approved Upper Level Liberal Studies Perspectives course is required in one of the Liberal Studies Perspectives categories.

Senior Year				
Fall	**14**	**Spring**		**12**
MATH 475: Stat. Mach. Learning/Data Sci. Elective	3	MATH 472 Data Science/MATH 474 Stat. Modeling		3
MATH 479: Capstone: Seminar	2	Data Science Elective		3
General Elective	3	General Elective		3
General Elective	3	General Elective		3
General Elective	3			

In the first semester of the senior year, students must apply for graduation.

MAJOR IN MATHEMATICS, Student Name: _____
B.S. DEGREE, DATA SCIENCE CONCENTRATION Term/Year Entered: _____
January 2023

A. Liberal Studies (42 Hours): See Liberal Studies Requirement Completion Record.
B. Core Math Courses (24 Hours): (These must be passed with a C or better.)

Course/Number	Prerequisite/Corequisite	Grade/Semester Taken
MATH 153, Calculus I (4)	MATH 146 or placement	
MATH 255, Calculus II (4)	MATH 153	
MATH 256, Calculus III (4)	MATH 255	
MATH 250, Intro. to Logic & Proof (3)	MATH 140 or 153 or Dept. Head consent	
MATH 270, Statistical Methods I (3)	MATH 146 or MATH 153 or placement	
MATH 310, Discrete Structures (3)	MATH 250 or instructor permission	
MATH 362, Linear Algebra I (3)	MATH 153 AND MATH 250	

C. Additional Required Courses (19 hours):

Course/Number	Prerequisite/Corequisite	Grade/Semester Taken
CS 150, Problem Solving & Program. I (4)	MATH 130 or math placement	
CS 151, Problem Solving & Program. II (4)	CS 150; Coreq: MATH 146/153/255	
MATH 472, Data Science (3)	MATH 270 or MATH 370	
MATH 474, Intro. to Stat. Modeling (3)	MATH 270 or MATH 370	
MATH 475, Stat. Machine Learning (3)	MATH 270 or MATH 370	
MATH 479, Capstone: Seminar (2)	C or better in MATH 250; 75 hours	

D. Data Science Electives (12 hours):
Choose 12 hours from the following: CS 253 (Software Develop.), CS 351 (Data Structures & Algorithms), CS 453 (Database Sys.), CS 466 (Info. Security I), CS 472 (Artificial Intel.), MATH 340 (Intro. Sci. Computing), MATH 370 (Prob. & Stat. I), MATH 430 (Math. Modeling), MATH 441 (Intro. Num. Analysis), MATH 450 (Linear Optimization), MATH 462 (Linear Alg. II), MATH 470 (Prob. & Stat. II), MATH 471 (Actuarial Exam P)

Course/Number	Prerequisite/Corequisite	Grade/Semester Taken

E. **NOT REQUIRED** A second major or a minor is **NOT** required, but a Computer Science major or minor can be a useful way to utilize general electives.

Major or minor: (If major, attach checksheet; if minor, complete below)		
Course/Number	Prerequisite/Corequisite	Grade/Semester Taken

F. Electives: Enough hours to reach 120 total hours for the degree

Course/Number	Prerequisite/Corequisite	Grade/Semester Taken

Numbers of hours completed after:

Semester								
#Hours								

Note: For all programs, a minimum of 32 credit hours must be earned at WCU at the Junior/Senior level.