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

- Total Hours for Degree: 120
- This sequence assumes that students begin in Calculus I. The general electives must include a related second major, minor, or a program approved by the Math and Computer Science Department Head.
- Students may finish earlier if they attend summer school at WCU or another approved institution.

Freshman Year			
Fall	**16**	**Spring**	**16**
MATH 153: Calculus I	4	MATH 255: Calculus II	4
First Year Seminar	3	COMM 201: Foundations of Communication	3
Liberal Studies	3	ENGL 101: Writing and Rhetoric	3
Liberal Studies	3	Liberal Studies	3
General Elective	3	General Elective	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 and Proof	3	MATH 340: Introduction to Scientific Computing	3
MATH 256: Calculus III	4	ENGL 202: Writing and Critical Inquiry	3
MATH 270: Statistical Methods I	3	Liberal Studies	3
Liberal Studies	3	General Elective	3
General Elective	3	General Elective	3

Junior Year			
Fall	**15**	**Spring**	**15**
MATH 320: Ordinary Differential Equations	3	MATH 310: Discrete Structures	3
MATH 362: Linear Algebra I	3	MATH Elective	3
Liberal Studies	3	Liberal Studies	3
General Elective	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**	**13**
MATH 479: Capstone: Seminar	2	MATH Elective	3
MATH Elective	3	Liberal Studies	3
Liberal Studies: Upper Level Perspective	3	General Elective	3
Liberal Studies	3	General Elective	3
General Elective	3	General Elective	1

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

MAJOR IN MATHEMATICS,
B.S. DEGREE, APPLIED CONCENTRATION
January 2023

Student Name: _____
Term/Year Entered: _____

A. Liberal Studies (42 Hours): See Liberal Studies Requirement Completion Record.
B. Core 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 and 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 (8 hours):

Course/Number	Prerequisite/Corequisite	Grade/Semester Taken
MATH 320, Ordinary Differential Equ. (3)	MATH 255	
MATH 340, Intro. to Scien. Computing (3)	MATH 255	
MATH 479, Capstone: Seminar (2)	C or better in MATH 250; 75 hours	

D. Math Electives (6 hours):

Choose **ONE** additional from the Computing/Modeling category: MATH 420 (Partial Differential Equations), MATH 430 (Mathematical Modeling), MATH 441 (Introduction to Numerical Analysis), MATH 450 (Linear Optimization)

Course/Number	Prerequisite/Corequisite	Grade/Semester Taken

Choose **ONE** from: MATH 361 (Abs. Alg. I), MATH 370 (Prob. & Stat. I), MATH 373 (Actuarial Exam FM), MATH 375 (Stat. Methods II), MATH 422 (Real Analysis I), MATH 423 (Real Analysis II), MATH 424 (Complex), MATH 430 (Modeling), MATH 441 (Num. Analysis), MATH 450 (Linear Op.), MATH 461 (Abs. Alg. II), MATH 462 (Linear Alg. II), MATH 470 (Prob. & Stat. II), MATH 471 (Actuarial Exam P), MATH 472 (Data Science), MATH 474 (Stat. Modeling), MATH 475 (Stat. Machine Learning) or other math courses approved by the MATH and CS department head.

Course/Number	Prerequisite/Corequisite	Grade/Semester Taken

E. A second major or minor, or a program in one of the following areas of application: biology, chemistry, computer science, economics, finance, geology, physics, or a program approved by the mathematics and computer science department head.

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.