

Major Program Guide For: B.S. in Mathematics
Concentration: Traditional 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 | | | |
|---|-----------|--|-----------|
| Course | 16 | Course | 15 |
| MATH 250: Introduction to Logic and Proof | 3 | MATH 310: Discrete Structures | 3 |
| MATH 256: Calculus III | 4 | MATH 340: Introduction to Scientific Computing | 3 |
| MATH 270: Statistical Methods I | 3 | ENGL 202: Writing and Critical Inquiry | 3 |
| Liberal Studies | 3 | Liberal Studies | 3 |
| General Elective | 3 | General Elective | 3 |

| Junior Year | | | |
|----------------------------|-----------|------------------------------|-----------|
| Course | 15 | Course | 15 |
| MATH 362: Linear Algebra I | 3 | MATH 361: Abstract Algebra I | 3 |
| MATH Elective | 3 | MATH Elective | 3 |
| Liberal Studies | 3 | Liberal Studies | 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 | | | |
|-----------------------------|-----------|--|-----------|
| Course | 14 | Course | 13 |
| MATH 479: Capstone: Seminar | 2 | MATH Elective | 3 |
| MATH Elective | 3 | Liberal Studies: Upper Level Perspective | 3 |
| Liberal Studies | 3 | General Elective | 3 |
| General Elective | 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, TRADITIONAL CONCENTRATION**
January 2023

Student Name: _____
Term/Year Entered: _____

- A. Liberal Studies (42 Hours): See Liberal Studies Requirement Completion Record.
B. Required 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 |
|--|-----------------------------------|-------|
| MATH 340, Intro. to Scien. Computing (3) | MATH 255 | |
| MATH 361, Abstract Algebra I (3) | MATH 250 | |
| MATH 479, Capstone: Seminar (2) | C or better in MATH 250; 75 hours | |

- D. Math Electives (12 hours):

Choose **ONE** from the Analysis category: MATH 422 (Real Analysis I), MATH 423 (Real Analysis II), MATH 424 (Complex Var. Theory)

| Course/Number | Semester Taken | Grade |
|---------------|----------------|-------|
| | | |

Choose **ONE** from the Computing/Modeling category: MATH 320 (Ordinary Differential Equations), MATH 420 (Partial Differential Equations), MATH 430 (Mathematical Modeling), MATH 441 (Introduction to Numerical Analysis), MATH 450 (Linear Optimization)

| Course/Number | Semester Taken | Grade |
|---------------|----------------|-------|
| | | |

Choose **ONE** from the Statistics category: MATH 370 (Prob. & Stat. I), MATH 373 (Actuarial Exam FM), MATH 375 (Stat. Methods II), MATH 470 (Prob. & Stat. II), MATH 471 (Actuarial Exam P), MATH 472 (Data Science), MATH 474 (Stat. Modeling), MATH 475 (Stat. Machine Learning)

| Course/Number | Semester Taken | Grade |
|---------------|----------------|-------|
| | | |

Choose **ONE** from: 320 (ODE), 370 (Prob & Stat I), 373 (Actuarial Exam FM), 375 (Stat. Methods II), 400 (History of Math), 420 (PDE), 422 (Real Analysis I), 423 (Real Analysis II), 424 (Complex), 430 (Modeling), 441 (Num. Analysis), 450 (Linear Op.), 461 (Abs. Alg. II), 462 (Linear Alg. II), 470 (Prob. & Stat. II), 471 (Actuarial Exam P), 472 (Data Science), 474 (Stat. Modeling), 475 (Stat. Machine Learning) or other math courses approved by the Math and CS department head

| Course/Number | Semester Taken | Grade |
|---------------|----------------|-------|
| | | |

- E. A second major or minor, or a program approved by the Math and CS department head.

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

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

| Course/Number | Semester Taken | Grade |
|---------------|----------------|-------|
| | | |
| | | |

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.