Mathematics is the international language of science and technology. Much of the subject matter in engineering and the natural sciences, as well as some social sciences such as economics, is presented in mathematical terms. Mathematical and statistical techniques are vital in fields that usually are not considered mathematical, such as biology, psychology, and political science. Some students are attracted to mathematics for its own sake, for the beauty, discipline, logic, and problem-solving challenges. Other students pursue mathematics in order to achieve deeper understanding in their own areas of study.

### Students minoring in mathematics must complete 18 credits in Mathematical Sciences courses numbered 200 and above, of which 9 credits must be 300-level or above, and taken at UWM. This minor is available as a post-baccalaureate option for students who have graduated. The college requires that students attain at least a 2.000 GPA on all credits in the minor attempted at UWM and on all minor credits attempted, including any transfer work.

### COURSES RECOMMENDED FOR STUDENTS MAJORING IN:

#### HUMANITIES, ARTS, OR EDUCATION:

**Start With:**
- Math 240: Matrices and Applications
- Math 341: Intro to Language & Practice of Math.

**Choose Two to Three of:**
- Math 531: Modern Algebra
- Math 535: Linear Algebra
- Math 511: Symbolic Logic
- 3 cr from: Math 490, 591, 599, 690, 699 Topics, Indep. Study, Capstone

**And One to Two of:**
- Math 205: Intro Finite Math
- Math 275: Problem Solving/Critical Thinking For Elem. Ed. Majors
- Math 277: Geometry for Elem. Ed. Majors
- MthStat 215: Elementary Statistical Analysis
- MthStat 216: Intro to Statistical Computing and Data Science

**PREREQUISITE**
- Math 2xx or Placement level 40
- Math 341
- Math 341+234/240
- 6 CR in 300 Level Math
- Varies

#### HEALTH SCIENCES, BUSINESS, SOCIAL SCIENCES OR EDUCATION:

**Start With:**
- Math 211: Survey in Calculus
- Math 240: Matrices and Applications

**Choose One Course From:**
- MthStat 215: Elementary Statistical Analysis*
  - *Note: Bus adm 210, Econ 210 may be substituted
- Math 205: Intro Finite Math
- Math 275: Problem Solving/Critical Thinking For Elem. Ed. Majors
- Math 277: Geometry for Elem. Ed. Majors
- Math 290: Topics in Mathematics

**And Three Courses From:**
- Math 305: Intro to Mathematical & Computational Modeling
- Math 313: Linear Programming & Optimization
- Math 315: Mathematical Programming & Optimization
- Math 405: Mathematical Models and Applications
- Math 417: Computational Linear Algebra
- 3 cr from: Math 490, 591, 599, 690, 699 Topics, Indep. Study, Capstone

**PREREQUISITE**
- Math placement level 30
- Math 2xx or Placement level 40
- Qla is Satisfied
- Math Placement level 30
- Math 175
- Math 175
- Math 176
- Math 176
- Math 211+2xx
- Math 240
- Math 211+240
- Math 211+240
- Math 240
- Varies
### ENGINEERING OR A NATURAL SCIENCE:

**Start With:**
- Math 213 or 231: First Semester Calculus
- Math 232: Calculus and Analytic Geometry II
  *Note: 221 + 222 is equivalent to 251+252+233*
- Math 233: Calculus and Analytic Geometry III
- Math 234: Linear Algebra & Differential Equations
- Math 240: Matrices and Applications
- Math 341: Intro to Language & Practice of Math.

**Then, choose at least one:**
- Math 232
- Math 232

**Finish by choosing any 3 of these courses:**
- **Math Placement Level 40**
- **Math Placement Level 40 or Math 2xx**

**PREREQUISITE**
- Math Placement Level 40
- Math 213 or 231
- Math 232
- Math 232
- Math Placement Level 40 or Math 2xx

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### INTRODUCTION TO APPLIED MATH
- Math 321: Intro to Mathematical & Computational Modeling
- ActSci 391: Investment Mathematics I
- Math 431: Modern Algebra w/ Applications

**PREREQUISITE**
- Math 213/231 or 211+2xx
- Math 232
- Math 232

### APPLIED STATISTICS EMPHASIS
- Math 423: Complex Analysis
- MthStat 361 & 362: Intro to Math. Stats I & II
- MthStat 563: Regression Analysis
- MthStat 564: Time Series Analysis
- MthStat 565: Nonparametric Statistics
- MthStat 566: Computational Statistics

**PREREQUISITE**
- Math 233
- Math 233
- Math 233
- MthStat 362
- MthStat 362
- MthStat 362
- MthStat 362

### APPLIED COMPUTATIONAL MATH EMPHASIS
- Math 313: Linear Programming & Optimization
- Math 320: Intro to Differential Equations
- Math 405: Mathematical Modeling & Applications
- Math 417: Computational Linear Algebra

**PREREQUISITE**
- Math 234 or 240
- Math 234 or 240+232
- Math 211/213 /231 + 234/240
- Math 234 or 240

### APPLIED/COMPUTATIONAL/STATS EMPHASIS
- Math 322: Partial Differential Equations
- Math 413: Intro to Numerical Analysis
- Math 415: Intro to Scientific Computing
- MthStat 562: Design of Experiments
- MthStat 568: Multivariate Statistical Analysis

**PREREQUISITE**
- Math 231+232
- Math 233+234
- Math 233+234
- MthStat 362 + Math 234/240
- MthStat 362 + Math 234/240

### PURE MATH EMPHASIS
- Math 345: Mathematics from a Historical Perspective
- Math 451: Axiomatic Geometry
- Math 453: Transformations in Geometry
- Math 521: Advanced Calculus I
- Math 531: Modern Algebra
- Math 537: Number Theory
- Math 535: Linear Algebra

**PREREQUISITE**
- Math 232
- Math 341+232
- Math 341+232
- Math 341+232
- Math 341
- Math 341+232
- Math 341+232

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**Have questions?**
**Need advice?**
**Ready to declare?**
**Contact Math Sciences...**

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