

# Mathematical Sciences Minors



**Stand out from the crowd,  
minor in math!**

**NEW—CALCULUS NOT REQUIRED.**

**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.

## MINOR REQUIREMENTS

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 2.500 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:

### PREREQUISITE

START WITH:	Math 240: Matrices and Applications Math 341: Intro to Language & Practice of Math.	MATH 2XX OR PLACEMENT LEVEL A MATH PLACEMENT LEVEL A
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	MATH 341 MATH 341+234/240 6 CR IN 300 LEVEL MATH VARIES
AND ONE TO TWO OF:	Math 205: Intro Finite Math Math 275: Problem Solving/Critical Thinking For Elem. Ed. Majors Math 276: Algebraic Structures for Elem. Ed. Majors Math 277: Geometry for Elem. Ed. Majors Math 278: Discrete Probability & Statistics for Elem. Ed. Majors MthStat 215: Elementary Statistical Analysis	MATH PLACEMENT LEVEL B MATH 175 MATH 175 MATH 176 MATH 176 QLA IS SATISFIED

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

### PREREQUISITE

START WITH:	Math 211: Survey in Calculus Math 240: Matrices and Applications	MATH PLACEMENT LEVEL B MATH 2XX OR PLACEMENT LEVEL A
CHOOSE ONE COURSE FROM:	MthStat 215: Elementary Statistical Analysis* *NOTE: BUS ADM 210, ECON 210 MAY BE SUBSTITUED Math 205: Intro Finite Math Math 275: Problem Solving/Critical Thinking For Elem. Ed. Majors Math 276: Algebraic Structures for Elem. Ed. Majors Math 277: Geometry for Elem. Ed. Majors Math 278: Discrete Probability & Statistics for Elem. Ed. Majors Math 290: Topics in Mathematics	QLA IS SATISFIED MATH PLACEMENT LEVEL B MATH 175 MATH 175 MATH 176 MATH 176 QLA IS SATISFIED
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	MATH 211+2XX MATH 240 MATH 211+240 MATH 211+240 MATH 240 VARIES

## ENGINEERING OR A NATURAL SCIENCE:

## PREREQUISITE

START WITH:	Math 213 or 231: First Semester Calculus Math 232: Calculus and Analytic Geometry II NOTE: 221 + 222 IS EQUIVALENT TO 231+232+233	MATH PLACEMENT LEVEL A MATH 213 OR 231
THEN, CHOOSE AT LEAST ONE:	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.	MATH 232 MATH 232 MATH PLACEMENT LEVEL A OR MATH 2XX MATH PLACEMENT LEVEL A

## PREREQUISITE

FINISH BY CHOOSING ANY 3 OF THESE COURSES:  (CHECK PREREQS AND CONTENT TO DECIDE WHAT TO TAKE!)	<b>INTRODUCTION TO APPLIED MATH</b> Math 305: Intro to Mathematical & Computational Modeling Math 311: Theory of Interest Math 431: Modern Algebra w/ Applications	MATH 213/231 OR 211+2XX MATH 232 MATH 232
	<b>APPLIED STATISTICS EMPHASIS</b> Math 321: Vector Calculus 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	MATH 233 MATH 233 MATH 233 MTHSTAT 362 MTHSTAT 362 MTHSTAT 362 MTHSTAT 362
	<b>APPLIED COMPUTATIONAL MATH EMPHASIS</b> Math 313: Linear Programming & Optimization Math 320: Intro to Differential Equations Math 405: Mathematical Modeling & Applications Math 417: Computational Linear Algebra	MATH 234 OR 240 MATH 234 OR 240+232 MATH 211/213 /231 + 234/240 MATH 234 OR 240
	<b>APPLIED/COMPUTATIONAL/STATS EMPHASIS</b> Math 315: Math. Programming & Optimization 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	MATH 211/233 +234/240 MATH 320+233 MATH 233+234 MATH 233+234 MTHSTAT 362 + MATH 234/240 MTHSTAT 362 + MATH 234/240
	<b>PURE MATH EMPHASIS</b> 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 Math 551: Elementary Topology	MATH 341+232 MATH 341+232 MATH 341+232 MATH 341 MATH 341+232 MATH 341+234/240 MATH 341+233

INTERESTED?

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

EMS Building, Room E403  
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Website: uwm.edu/math