

# MATHEMATICS MINOR

## Minor requirements

(Units depend on basic courses.)

The mathematics minor consists of basic courses and 6 upper-level courses.

### Basic Courses

Students may count basic courses toward the requirements of more than one major, minor, or program.

Course	Title
MATH 220-1 & MATH 220-2 or MATH 218-1 & MATH 218-2 & MATH 218-3	Single-Variable Differential Calculus and Single-Variable Integral Calculus Single-Variable Calculus with Precalculus and Single-Variable Calculus with Precalculus and Single-Variable Calculus with Precalculus
MATH 226-0	Sequences and Series
MATH 230-1 & MATH 230-2 & MATH 240-0 or MATH 228-1 & MATH 228-2 & GEN_ENG 205-1 or ES_APPM 252-1 & ES_APPM 252-2 & GEN_ENG 206-1 or MATH 281-1 & MATH 281-2 & MATH 281-3 or MATH 285-1 & MATH 285-2 & MATH 285-3 or MATH 290-1 & MATH 290-2 & MATH 290-3 or MATH 291-1 & MATH 291-2 & MATH 291-3	Multivariable Differential Calculus and Multivariable Integral Calculus and Linear Algebra Multivariable Differential Calculus for Engineering and Multivariable Integral Calculus for Engineering and Engineering Analysis I Honors Calculus for Engineers and Honors Calculus for Engineers and Honor Engineering Analysis Accelerated Mathematics for ISP: First Year and Accelerated Mathematics for ISP: First Year and Accelerated Mathematics for ISP: First Year Accelerated Mathematics for MMSS: First Year and Accelerated Mathematics for MMSS: First Year and Accelerated Mathematics for MMSS: First Year MENU: Linear Algebra and Multivariable Calculus and MENU: Linear Algebra and Multivariable Calculus and MENU: Linear Algebra and Multivariable Calculus MENU: Intensive Linear Algebra and Multivariable Calculus and MENU: Intensive Linear Algebra and Multivariable Calculus and MENU: Intensive Linear Algebra and Multivariable Calculus

### Upper-level Courses

Students must complete 6 upper-level mathematics courses. Upper-level courses are courses at the 300 level or above.

**The 6 upper-level courses must include at least 1 of the following two-course sequences:**

Course	Title
MATH 310-1 & MATH 310-2	Probability and Stochastic Processes and Probability and Stochastic Processes
MATH 311-1 & MATH 311-2	MENU: Probability and Stochastic Processes and MENU: Probability and Stochastic Processes
MATH 320-1 & MATH 320-2	Real Analysis and Real Analysis
MATH 321-1 & MATH 321-2	MENU: Real Analysis and MENU: Real Analysis
MATH 330-1 & MATH 330-2	Abstract Algebra and Abstract Algebra

MATH 331-1 & MATH 331-2	MENU: Abstract Algebra and MENU: Abstract Algebra
MATH 344-1 & MATH 344-2	Introduction to Topology and Introduction to Topology

With prior approval from the Director of Undergraduate Studies (<https://www.math.northwestern.edu/undergraduate/advising/>), the upper-level courses may include as many as 2 courses offered by other departments with substantial mathematical content or that focus on serious applications of mathematics. No such course may count simultaneously toward the requirements of another major or minor.