**MATHEMATICS SECOND MAJOR OR MINOR FOR MMSS STUDENTS**

Students must also complete the Undergraduate Registration Requirement (https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement/) and the degree requirements of their home school.

**NOTE:** This Catalog describes Weinberg College BA requirements that pertain to students who matriculated at Northwestern after spring quarter 2023. Refer to the Archives (https://catalogs.northwestern.edu/archives/) if you are following BA requirements described in the 2018-2019 through 2022-2023 editions.

**Second Major in Mathematics for MMSS Majors**

A student who has completed all of the requirements for an adjunct major in Mathematical Methods in the Social Sciences (MMSS) (https://catalogs.northwestern.edu/undergraduate/arts-sciences/mathematical-methods-social-sciences/) but not a major in a social science must satisfy the ordinary requirements for the mathematics major (https://catalogs.northwestern.edu/undergraduate/arts-sciences/mathematics/mathematics-major/) to earn an additional major in mathematics. Students may not count any 300 level mathematics course toward both the MMSS adjunct major and the mathematics major.

**Third Major in Mathematics for MMSS Majors**

A student who has completed all of the requirements for an adjunct major in Mathematical Methods in the Social Sciences (MMSS) (https://catalogs.northwestern.edu/undergraduate/arts-sciences/mathematical-methods-social-sciences/) and a major in a social science will satisfy the requirements for an additional major in mathematics by

- completing Course Title
  - MATH 226-0 Sequences and Series

- completing 1 of the following course sequences:
  - Course Title
    - MATH 320-1 Real Analysis
    - & MATH 320-2 and Real Analysis
    - & MATH 320-3 and Real Analysis
    - or MATH 321-1 MENU: Real Analysis
    - & MATH 321-2 and MENU: Real Analysis
    - & MATH 321-3 and MENU: Real Analysis

- and completing 3 of the following courses:
  - Course Title
    - MATH 300-0 Foundations of Higher Mathematics
    - or MATH 310-2 Probability and Stochastic Processes
    - or MATH 310-3 Probability and Stochastic Processes
    - or MATH 311-2 MENU: Probability and Stochastic Processes
    - or MATH 311-3 MENU: Probability and Stochastic Processes
    - or MATH 325-0 Complex Analysis
    - or MATH 330-1 Abstract Algebra

Students may not count any 300 level mathematics course toward both the MMSS adjunct major and the mathematics minor.

**Minor in Mathematics for MMSS Majors**

A student who has completed all of the requirements for an adjunct major in Mathematical Methods in the Social Sciences (MMSS) (https://catalogs.northwestern.edu/undergraduate/arts-sciences/mathematical-methods-social-sciences/) will satisfy the requirements for a mathematics minor by

- completing Course Title
  - MATH 226-0 Sequences and Series

- and completing 1 of the following course sequences:
  - Course Title
    - MATH 320-1 Real Analysis
    - & MATH 320-2 and Real Analysis
    - & MATH 320-3 and Real Analysis
    - or MATH 321-1 MENU: Real Analysis
    - & MATH 321-2 and MENU: Real Analysis
    - & MATH 321-3 and MENU: Real Analysis

Students may not count any 300 level mathematics course toward both the MMSS adjunct major and the mathematics minor.

or MATH 330-2 Abstract Algebra
or MATH 330-3 Abstract Algebra
or MATH 331-1 MENU: Abstract Algebra
or MATH 331-2 MENU: Abstract Algebra
or MATH 331-3 MENU: Abstract Algebra
or MATH 334-0 Linear Algebra: Second Course
or MATH 344-1 Introduction to Topology
or MATH 344-2 Introduction to Topology
or MATH 360-1 MENU: Applied Analysis
or MATH 360-2 MENU: Applied Analysis
or MATH 366-0 Mathematical Models in Finance
or MATH 368-0 Introduction to Optimization

See the Mathematics Major (https://catalogs.northwestern.edu/undergraduate/arts-sciences/mathematics/mathematics-major/) for further information regarding Honors in Mathematics, Graduate Study in Mathematics, and Secondary Teaching Licensure in Mathematics.