



Duluth Campus

Mathematical Sciences Minor

Mathematics & Statistics

Swenson College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

Department of Mathematics and Statistics, 140 Solon Campus Center, 1117 University Drive, Duluth, MN 55812 (218-726-8747; fax: 218-726-8399)

Email: mathstat@d.umn.edu

Website: <https://scse.d.umn.edu/about/departments-and-programs/mathematics-statistics-department>

- Program Type: Graduate minor related to major
- Requirements for this program are current for Fall 2022
- Length of program in credits (Masters): 6
- Length of program in credits (Doctorate): 12
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

The Mathematical Sciences minor is for those wishing to pursue careers in other fields that use mathematics or statistics.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

A strong background in mathematics and/or statistics.

Other requirements to be completed before admission:

Students interested in the minor are strongly encouraged to confer with their major field advisor and director of graduate studies, and the Mathematical Sciences director of graduate studies regarding feasibility and requirements.

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

Minor coursework offered on both the A-F and S/N grading basis must be taken A-F, with a minimum grade of B- earned for each course.

Minor Coursework (6 to 12 credits)

Masters students select 6 credits, and doctoral students select 12 credits from the following in consultation with the Mathematical Sciences director of graduate studies.

[MATH 5201](#) - Real Variables (4.0 cr)

[MATH 5327](#) - Advanced Linear Algebra (3.0 cr)

[STAT 5571](#) - Probability (4.0 cr)

[MATH 5233](#) - Mathematical Foundations of Bioinformatics (3.0 cr)

[MATH 5202](#) - Applied Functional Analysis (3.0 cr)

[MATH 5260](#) - Dynamical Systems (3.0 cr)



MATH 5270 - Modeling with Dynamical Systems (3.0 cr)
MATH 5280 - Partial Differential Equations (3.0 cr)
MATH 5810 - Linear Programming (3.0 cr)
MATH 8201 - Real Analysis (3.0 cr)
MATH 5330 - Theory of Numbers (3.0 cr)
MATH 5347 - Applied Algebra and Cryptology (3.0 cr)
MATH 5365 - Graph Theory (3.0 cr)
MATH 5366 - Enumerative Combinatorics (3.0 cr)
MATH 5372 - Abstract Algebra II (3.0 cr)
STAT 5411 - Analysis of Variance (3.0 cr)
STAT 5511 - Regression Analysis (3.0 cr)
STAT 5515 - Multivariate Statistics (3.0 cr)
STAT 5521 - Applied Time Series Analysis (3.0 cr)
STAT 5531 - Probability Models (4.0 cr)
STAT 5572 - Statistical Inference (4.0 cr)
STAT 8611 - Linear Models (3.0 cr)

Program Sub-plans

Students are required to complete one of the following sub-plans.
Students may not complete the program with more than one sub-plan.

Masters

Doctoral