



Mathematics

Total Credits: 42+

Department Chair: Professor Antonella Marini
marini@yu.edu

Find the Website [here](#)

The department of mathematical sciences offers degrees in three concentrations:

- 1. Specialization in Pure and Applied Mathematics**
- 2. Specialization in Computational Science**
- 3. Specialization in Actuarial and Financial Mathematics**

Details for each specialization can be found on pages 2-4

Mathematics Minor Total Credits: 21

REQUIRED COURSES

Course #	Course Name	Credits
MATH 1412	Calculus I	4
MATH 1413	Calculus II	4
MATH 1510	Multivariable Calculus	4
MATH 2105	Linear Algebra	3

ELECTIVES (6 credits)

Two (2) MATH courses 1500 or higher

Note: Graduate courses in Mathematics are open to undergraduate students who successfully completed Multivariable Calculus and Linear Algebra.

Specialization in Pure and Applied Mathematics

Total Credits: **42+**

REQUIRED COURSES (7 courses, 24 credits)

Course #	Course Name	Credits
MATH 1412	Calculus I	4
MATH 1413	Calculus II	4
MATH 1510	Multivariable Calculus	4
MATH 1520	Advanced Calculus 1 (or MATH 5300)	3
MATH 2105	Linear Algebra	3
MATH 2461	Probability Theory	3
MATH 2601	Differential Equations	3

ELECTIVES 1500 Level or higher (4 courses, 12 credits)

Recommended courses include

- MATH 1504
- MATH 2462
- MATH 1521 or MATH 5301
- MATH 1540 or MATH 5405
- MATH 2215 or MATH 5339

CORRELATES (2 courses, 6+ credits)

Chosen from computer science, or graduate mathematics, artificial intelligence, data analytics and visualization

Specialization in Computational Science

Total Credits: **42+**

REQUIRED COURSES (7 courses, 24 credits)

Course #	Course Name	Credits
MATH 1412	Calculus I	4
MATH 1413	Calculus II	4
MATH 1510	Multivariable Calculus	4
MATH 2105	Linear Algebra	3
MATH 2461	Probability Theory	3
MATH 2462	Mathematical Statistics	3
MATH 2651	Numerical Analysis	3

ELECTIVES (4 courses, 12+ credits)

Chosen from computer science or advanced mathematics.

Recommended courses include

- COMP 1300
- COMP 1310
- COMP 1320
- COMP 2545
- COMP 3920

CORRELATES (2 courses, 6+ credits)

Chosen from computer science, or graduate mathematics, artificial intelligence, data analytics and visualization

Specialization in Actuarial and Financial Mathematics

Total Credits: **42**

REQUIRED COURSES (7 courses, 24 credits)

Course #	Course Name	Credits
MATH 1412	Calculus I	4
MATH 1413	Calculus II	4
MATH 1510	Multivariable Calculus	4
MATH 2105	Linear Algebra	3
MATH 2461	Probability Theory	3
MATH 2462 or MATH 5266	Mathematical Statistics	3
MATH 2901	Mathematics of Finance (or MATH 5640)	3

ELECTIVES (4 courses, 12 credits)

Chosen from economics, business intelligence and marketing analytics or advanced mathematics.

Recommended courses include

- ECON 1010
- ECON 1101
- ECON 1201
- ECON 1421
- ECON 1601
- ACC 1001
- ACC 1002
- FIN 1001
- IDS 2030
- IDS 2550
- IDS 3000
- IDS 2160
- IDS 2020

CORRELATES (2 courses, 6 credits)

Chosen from computer science, or graduate mathematics, artificial intelligence, data analytics and visualization