MATHEMATICS B.S.

This program is designed to offer a broad exposure to the rich field of mathematics. There are three tracks in the B.S. program: general track, statistics track and applied concentration track. All three tracks are suited for students interested in pursuing graduate work or careers in the mathematical sciences. The general track requires 15 mathematics courses (48 credit hours), consisting of 9 required courses (30 hours) and 6 electives (18 hours). The statistics track, which could lead to further study or careers in statistics or actuarial science, also requires 15 mathematics courses (48 credit hours) with at least 5 of these courses (15 hours) statistically oriented. The applied concentration track requires 11 mathematics courses (36 hours) and 4 courses (12-16 hours) in an area of concentration (e.g. analytics, physics, chemistry, biology, or computer science). The concentration courses must be pre-approved by the Mathematics Curriculum Committee and the Department Chair. Additionally, all three tracks require two semesters of physics with lab (8 credit hours).

Admission and internal transfers into this program has been paused for the 2022-2023 academic year.

Program Requirements

Students within the department must maintain a minimum 2.0 G.P.A. in coursework required for their major and taken at D'Youville College. Students who fail to earn this G.P.A. will be placed on probation in the major. Probation may continue for a maximum of three consecutive semesters or a total of four non- consecutive semesters. Students who exceed these limits will be dismissed from the major. Students may appeal these decisions on academic status by submitting, in writing to the department chairperson, reasons why exceptional consideration may be justified. Additionally, Students must earn a minimum grade of B- in Calculus I (MAT-125) and Calculus II (MAT-126)

Course Requirements

General Track

Code	Title	Credits
Major Requirements		56
General Education Requirements		30
Free electives (including remaining Liberal Arts and Sciences Requirements)		34
Total Credits		120

Course Requirements for the Major

Code	Title	Credits
MAT-125	Calculus I [1]	4
MAT-126	Calculus II [1]	4
MAT-202	Calculus III	4
MAT-300	Introduction to Mathematical Reasoning	3
MAT-301	Real Analysis I	3
MAT-302	Real Analysis II	3
MAT-315	Linear Algebra	3
MAT-401	Abstract Algebra I	3
MAT-402	Abstract Algebra II	3
Total Credits		30

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Courses require a minimum grade of B-.

Mathematics Electives (Select from the Following, Minimum 18 Credits)

Code	Title	Credits
MAT-303	Foundations of Geometry I	3
MAT-304	Foundations of Geometry II	3
MAT-310	Foundations of Mathematics	3
MAT-318	Discrete Math	3
MAT-321	Differential Equations	3
MAT-375	Math Modeling in Biology	3
MAT-389	Special Topics	1-3
MAT-390	Special Topics	1-3
MAT-403	Probability	3
MAT-404	Mathematical Statistics	3
MAT-407	Senior Seminar I	2
MAT-408	Senior Seminar II	2
MAT-410	Number Theory	3
MAT-412	General Topology	3
MAT-414	Complex Analysis	3
MAT-417	Introduction to Graph Theory	3
MAT-420	Introduction to Linear Models	3
MAT-421	Design of Experiments	3
MAT-424	Numerical Analysis	3
MAT-443	Methods of Teaching Mathematics	3
MAT-479	Data Analysis Methods	3
MAT-480	Statistical Applications	3

In Other Academic Areas Required for Major

Select One of the Following Two Sequences

Code	Title	Credits
PHY-101	General Physics I	3
PHY-101L	Gen Physics Lab I	1
PHY-102	General Physics II	3
PHY-102L	Gen Physics Lab II	1
Total Credits		8

or

Code	Title	Credits
PHY-103	Physics for Engineers	3
PHY-103L	Physics for Engineers Lab 1	1
PHY-104	Physics for Engineers II	3
PHY-104L	Physics for Engineers II Lab	1
Total Credits		8

Statistics Track

Code	Title	Credits
Major Requirements		56
General Education Requirements		30
Free electives (including remaining Liberal Arts and Sciences Requirements)		34
Total Credits		120

Course Requirements for the Major

Code	Title	Credits
MAT-125	Calculus I [1]	4
MAT-126	Calculus II [1]	4
MAT-202	Calculus III	4
MAT-300	Introduction to Mathematical Reasoning	3
MAT-301	Real Analysis I	3
MAT-315	Linear Algebra	3
MAT-401	Abstract Algebra I	3
MAT-403	Probability	3
MAT-404	Mathematical Statistics	3
Total Credits		30

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Courses require a minimum grade of B-.

Statistics Electives (Select Three of the Following)

Code	Title	Credits
MAT-420	Introduction to Linear Models	3
MAT-421	Design of Experiments	3
MAT-479	Data Analysis Methods	3
MAT-480	Statistical Applications	3

Mathematics Electives (Select from the Following, Minimum 9 Credits)

Code	Title	Credits
MAT-302	Real Analysis II	3
MAT-303	Foundations of Geometry I	3
MAT-304	Foundations of Geometry II	3
MAT-310	Foundations of Mathematics	3
MAT-318	Discrete Math	3
MAT-321	Differential Equations	3
MAT-375	Math Modeling in Biology	3
MAT-389	Special Topics	1
MAT-390	Special Topics	3
MAT-402	Abstract Algebra II	3
MAT-407	Senior Seminar I	2
MAT-408	Senior Seminar II	2
MAT-410	Number Theory	3
MAT-412	General Topology	3
MAT-414	Complex Analysis	3
MAT-417	Introduction to Graph Theory	3
MAT-420	Introduction to Linear Models	3
MAT-421	Design of Experiments	3
MAT-424	Numerical Analysis	3
MAT-443	Methods of Teaching Mathematics	3
MAT-479	Data Analysis Methods	3
MAT-480	Statistical Applications	3

In Other Academic Areas Required for Major

Select One of the Following Two Sequences

Code	Title	Credits
PHY-101	General Physics I	3
PHY-101L	Gen Physics Lab I	1
PHY-102	General Physics II	3
PHY-102L	Gen Physics Lab II	1
Total Credits		8

or

Code	Title	Credits
PHY-103	Physics for Engineers	3
PHY-103L	Physics for Engineers Lab 1	1
PHY-104	Physics for Engineers II	3
PHY-104L	Physics for Engineers II Lab	1
Total Credits		8

Applied Concentration Track

Code	Title	Credits
Major Requirements - includes 4 concentration courses (12-16 credits) at 200+ level [1]		56
General Education Requirements		30
Free electives (including remaining Liberal Arts and Sciences Requirements)		34
Total Credits		120

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Concentration courses must be pre-approved by the Mathematics Curriculum Committee and the chair of the department (Suggested concentrations: analytics, biology, chemistry, computer science or physics).

Course Requirements for the Major

Code	Title	Credits
MAT-125	Calculus I [1]	4
MAT-126	Calculus II [1]	4
MAT-202	Calculus III	4
MAT-300	Introduction to Mathematical Reasoning	3
MAT-301	Real Analysis I	3
MAT-315	Linear Algebra	3
MAT-401	Abstract Algebra I	3
Total Credits		24

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Courses require a minimum grade of B-

Mathematics Electives (Select from the Following, Minimum 12 Credits)

Code	Title	Credits
MAT-302	Real Analysis II	3
MAT-303	Foundations of Geometry I	3
MAT-304	Foundations of Geometry II	3
MAT-310	Foundations of Mathematics	3
MAT-318	Discrete Math	3
MAT-321	Differential Equations	3
MAT-375	Math Modeling in Biology	3
MAT-389	Special Topics	1
MAT-390	Special Topics	3
MAT-402	Abstract Algebra II	3
MAT-403	Probability	3
MAT-404	Mathematical Statistics	3

MAT-407	Senior Seminar I	2
MAT-408	Senior Seminar II	2
MAT-410	Number Theory	3
MAT-412	General Topology	3
MAT-414	Complex Analysis	3
MAT-417	Introduction to Graph Theory	3
MAT-420	Introduction to Linear Models	3
MAT-421	Design of Experiments	3
MAT-424	Numerical Analysis	3
MAT-443	Methods of Teaching Mathematics	3
MAT-479	Data Analysis Methods	3
MAT-480	Statistical Applications	3

In Other Academic Areas Required for Major

Select One of the Following Two Sequences

Code	Title	Credits
PHY-101	General Physics I	3
PHY-101L	Gen Physics Lab I	1
PHY-102	General Physics II	3
PHY-102L	Gen Physics Lab II	1
Total Credits		8

or

Code	Title	Credits
PHY-103	Physics for Engineers	3
PHY-103L	Physics for Engineers Lab 1	1
PHY-104	Physics for Engineers II	3
PHY-104L	Physics for Engineers II Lab	1
Total Credits		8

The B.S. in mathematics requires a minimum high school average of 85 percent and a rank in the top 25 percent of one's class. Transfer students are required to have a minimum G.P.A. of 2.5.

The B.A. in mathematics requires a minimum high school average of 80 percent and a rank in the top 50 percent of one's class. Transfer students are required to have a minimum G.P.A. of 2.5.

Students nearly meeting these requirements will be considered for these programs by the department. Students denied immediate acceptance into the mathematics B.S. will be accepted in to the mathematics B.A. program if they meet its requirements. These students may be promoted into the mathematics B.S. program after they have sufficiently demonstrated competence (usually after the completion of two semesters).