Mathematics, BS

The Bachelor of Science degree requires 14 mathematics courses and 2 physics courses. It is the degree most commonly pursued by math majors and is the one recommended for those strongly interested in mathematics and science.

Program Requirements

- Concentrations and course offerings may vary by campus and/or by program modality. Please consult with your advisor or admissions coach for the course availability each term at your campus or within your program modality.
- Certain options within the program may be *required* at certain campuses or for certain program modalities. Please consult with your advisor or admissions coach for requirements at your campus or for your program modality.

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

Universitywide Requirements

All undergraduate students are required to complete the Universitywide Requirements (https://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements/).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (https://catalog.northeastern.edu/undergraduate/university-academics/nupath/).

Mathematics Major Grade Requirement

A grade of C or higher is required in all mathematics courses numbered 3000 and below and in MATH 4000.

Mathematics Major Requirements

Code	Title	Hours
Problem Solving		
MATH 1365	Introduction to Mathematical Reasoning	4
Calculus		
A grade of C or higher is required:		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
Intermediate and Advanced Mathematics		
MATH 2331	Linear Algebra	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4
MATH 3150	Real Analysis	4
MATH 3175	Group Theory	4
Co-op Reflections		
MATH 3000	Co-op and Experiential Learning Reflection Seminar 1	1
Mathematics Electives		
Complete four courses in the following range:		16
MATH 3101 to MATH 4899		
Required Physics		
Physics 1		
Complete one of the following:		5
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	

Physics 2		
Complete one of the following:		5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
Capstone		
Complete one of the following:		4
MATH 4025	Applied Mathematics Capstone	
MATH 5131	Introduction to Mathematical Methods and Modeling	
MATH 4020	Research Capstone	

Mathematics Major Credit Requirement

Complete 66 semester hours in the major.

Upper-Division Electives

Note: Courses used as upper-division electives do not count toward the major or NUpath.

Code	Title	Hours
Complete three general electives numbered 3000 or above.		12

Program Requirement

128 total semester hours required

Plan of Study
Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341	4	MATH 1342	4	Vacation	0	Vacation	0
MATH 1365	4	PHYS 1165	4				
Elective	4	PHYS 1166	1				
PHYS 1161	4	ENGW 1111	4				
PHYS 1162	1	Elective	4				
MATH 1000	1						
	18		**17**		**0**		**0**

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321	4	MATH 2341	4	Vacation	0	Co-op	0
MATH 2331	4	Elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
		EESC 2000	1				
	16		**17**		**0**		**0**

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MATH elective	4	MATH elective	4	Co-op	0
		ENGW 3315	4	Elective	4		
		MATH 3081	4				
		Upper-division elective	4				
		MATH 3000	1				
	0		**17**		**8**		**0**

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MATH 3150	4	MATH elective	4	Co-op	0

		MATH elective	4	Elective	4		
		Elective	4				
		Upper-division elective	4				
	0		**16**		**8**		**0**

Year 5

Fall	Hours	Spring	Hours
Co-op	0	MATH 3175	4
		MATH elective	4
		MATH 4025	4
		Upper-division elective	4
	0		**16**

Total Hours: 133

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1161	4	MATH 1342	4	Vacation	0	Vacation	0
PHYS 1162	1	PHYS 1165	4				
MATH 1365	4	PHYS 1166	1				
MATH 1341	4	ENGW 1111	4				
MATH 1000	1	Elective	4				
Elective	4						
	18		**17**		**0**		**0**

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321	4	Co-op	0	Co-op	0	Vacation	0
MATH 2331	4						
Elective	4						
Elective	4						
EESC 2000	1						
	17		**0**		**0**		**0**

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	Co-op	0	Co-op	0	MATH elective	4
MATH 3175	4					Elective	4
Elective	4						
Elective	4						
MATH 3000	1						
	17		**0**		**0**		**8**

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Co-op	0	Co-op	0	MATH elective	4
MATH 3081	4					Elective	4
MATH 3150	4						
Upper-division elective	4						
	16		**0**		**0**		**8**

Year 5

Fall	Hours	Spring	Hours
MATH elective	4	Elective	4
MATH elective	4	MATH 4025	4
Upper-division elective	4	Upper-division elective	4

Elective	4	MATH elective	4
	16		**16**

Total Hours: 133