Mathematics and Philosophy, BS (Boston)

Overview

The mathematics and philosophy combined major integrates the tools, concepts, and skills of mathematics and philosophy. This major explores the philosophical foundations of mathematics, including questions about the nature of mathematical knowledge and the status of the axioms of mathematics and probability theory, while also applying key tools from mathematics to philosophical problems such as those that arise in evolutionary game theory, philosophy of economics, and philosophy of science.

Program Requirements

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 Requirements

Code	Title	Hours
Required Courses		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 1365	Introduction to Mathematical Reasoning	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2331	Linear Algebra	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4
Mathematics Electives		
Complete two courses in the following range: MATH 3001 to MATH 4999		8

Philosophy Requirements

Code	Title	Hours
Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
PHIL 2330	Modern Philosophy	4
Complete one of the following:		4
PHIL 2001	Ethics and Evolutionary Games	
PHIL 3050	Information and Uncertainty	
Philosophy Advanced Electives		
Complete one of the following:		4
PHIL 3360	Scientific Approaches to Philosophy	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4535	Philosophy of Mind	
PHIL 4550	Philosophy of Economics	
Open Electives		
Complete three additional PHIL courses.		12

Integrative Requirement

Code	Title	Hours
PHIL 4515	Advanced Deductive Logic	4
or PHIL 4516	Advanced Inductive Logic	

Capstone

Code	Title	Hours
Complete one of the following not used to satisfy another requirement:		4
MATH 4020	Research Capstone	
MATH 4025	Applied Mathematics Capstone	
MATH 5131	Introduction to Mathematical Methods and Modeling	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4535	Philosophy of Mind	
PHIL 4550	Philosophy of Economics	
PHIL 4901	Topics in Philosophy Seminar	

Mathematics and Philosophy Combined Major Credit Requirement

Students must maintain a minimum GPA of 2.000 in their mathematics and philosophy courses.

68 semester hours required

Program Requirement

128 semester hours required

Plan of Study
Sample Plan of Study
FOUR YEARS, TWO CO-OPS IN SUMMER 2/ FALL

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1365	4	MATH 1341	4	Elective	4	Elective	4
PHIL 1115	4	PHIL 2325	4	Elective	4	Elective	4
PHIL elective	4	PHIL elective	4				
Elective	4	Elective	4				
	16		16		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1342	4	MATH 2331	4	Elective	4	Co-op	0
MATH 2321	4	PHIL advanced elective	4	Elective	4		
PHIL 2330	4	Elective	4				
Elective	4	Elective	4				
	16		16		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MATH 2341	4	Elective	4	Co-op	0
		MATH 3081	4	Elective	4		
		PHIL 2001 or 3050	4				
		Course in the following range: MATH 3001 to Math 4999	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours
Co-op	0	PHIL 4515	4
		Capstone in PHIL or MATH	4

Course in the following range: MATH 3001 to MATH 4999	4	
Elective	4	
0	**16**	

Total Hours: 128