

Design and Mathematics, BS

The combined major in design and mathematics integrates the study of mathematics as the language of science and technology with the practice of understanding humans, their surrounding contexts and systems, and designing alternative futures. Students are provided a rich source of methods for analyzing and solving problems encountered in the physical world to enhance the human understanding and experience of complex and vital knowledge.

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/>).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Differences and Diversity (DD), and Ethical Reasoning (ER) must be met through electives.

Design Requirements

Code	Title	Hours
Art + Design or Mathematics at Northeastern		
ARTF 1000 or MATH 1000	Art and Design at Northeastern Mathematics at Northeastern	1
Art + Design Fundamentals Required		
ARTF 1220	Elements of Visual Composition (with optional ARTF 1221)	2
Art + Design Fundamentals Elective		
Complete three of the following:		6
ARTF 1200	Representational Drawing	
ARTF 1210	Abstract Drawing	
ARTF 1230 and ARTF 1231	Making with Form and Materials and Making with Form and Materials Tools	
ARTF 1240 and ARTF 1241	Making with Video, Sound, and Animation and Making with Video, Sound, and Animation Tools	
ARTF 1250 and ARTF 1251	Designing Interactive Experiences and Designing Interactive Experiences Tools	
Design Required		
ARTG 1001 and ARTG 1002	Design Perspectives: An Introduction to Design in the World and Seminar for Design Perspectives	4
ARTG 1270 and ARTG 1271	Design: Process + Practices and Studio for Design: Process + Practices	4
ARTG 1290 and ARTG 1291	Typographic Systems and Studio for Typographic Systems	4
Design Elective		
Complete any one ARTG course as long as prerequisites have been met and it has not used to fulfill other requirements of the program. ARTG 2262 and ARTG 2263 are recommended. ¹		4
Art + Design History Elective		
Complete any one ARTH course. ARTH 1001 Visual Intelligence and ARTH 1002 Seminar in Visual Intelligence are recommended.		4
Art + Design Elective		
Complete any one ARTD, ARTE, ARTF(4SH), ARTG, ARTH, ARTS, EXRE, or GAME course for which prerequisites have been met and it has not used to fulfill other requirements of the program.		4

If ARTG 5000 Topics in Design (or any other topics course in the subjects listed above) is completed more than once, the additional completions may be allowed toward the electives.

Degree Project

ARTG 4550	Design Degree Project	4
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¹ For students interested in the PlusOne in Information Design and Data Visualization, speak with an advisor about an alternative course option to Prototyping with Code (ARTG 2262) and Lab for ARTG 2262 (ARTG 2263).

Design Option

Code	Title	Hours
Complete one of the following options:		
Experience Design Option		
ARTG 3462	Experience Design Principles	8
ARTG 3464	Topics In Experience Design Inquiry	
Graphic Design Option		
ARTG 2252	Graphic Design Principles	
ARTG 3452	Topics In Graphic Design Inquiry	
Information Design Option		
ARTG 2242	Information Design Principles	
ARTG 3444	Topics in Information Design Inquiry	
Interaction Design Option		
ARTG 2400	Interaction Design Principles (with optional ARTG 2401)	
ARTG 3400	Topics In Interaction Design Inquiry	

Mathematics Requirements

Code	Title	Hours
Required Mathematics		
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:		8
MATH 3001 to MATH 4999		

Integrative Requirement

Code	Title	Hours
The following course is already required in the major:		
ARTG 4550	Design Degree Project	

Combined Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Plan of Study

FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER 1

Year 1		Year 2		Year 3		Year 4	
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000 or MATH 1000		1 MATH 1342		4 ARTF 1220 (with optional ARTF 1221)		2 A+D fundamentals elective	2

