

Data Science and Communication Studies, BS (Boston)

The data science and communication studies combined major offers an integrative curriculum in the study of communication skills and in the collection, manipulation, storage, retrieval, and computational analysis of data in its various forms, including numeric, textual, image, and video data from small to large volumes. Students have an opportunity to gain a deep understanding of the major conceptual frameworks for human communication—plus how to apply this knowledge to solve problems in today's society.

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/>).

Data Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200 or COMM 1000	First Year Seminar Communication Studies at Northeastern	1
CS 1210 or EEAM 2000	Professional Development for Khoury Co-op Professional Development for Co-op	1

Computer Science Required Courses

All students can take a self-assessment to attempt to place out of CS 2000 and CS 2001. Students who place out of CS 2000 and CS 2001 will instead substitute with 4-5 semester hours of CS, CY, or DS coursework at the 3000 level or higher not otherwise required in the degree.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2000 and CS 2001	Introduction to Program Design and Implementation and Lab for CS 2000	5
CS 3200	Introduction to Databases	4

Programming Sequence Pathways

Complete one of the following two options: 9

Computer Science Option

CS 2100 and CS 2101	Program Design and Implementation 1 and Lab for CS 2100	
CS 3100 and CS 3101	Program Design and Implementation 2 and Lab for CS 3100	

Data Science Option

DS 2500 and DS 2501	Intermediate Programming with Data and Lab for DS 2500	
DS 3500	Advanced Programming with Data	

Data Science Foundations

DS 3000	Foundations of Data Science	4
DS 4200	Information Presentation and Visualization	4
DS 4300	Large-Scale Information Storage and Retrieval	4
DS 4400	Machine Learning and Data Mining 1	4
DS 4420 or DS 4440	Machine Learning and Data Mining 2 Practical Neural Networks	4

Khoury Approved Electives

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 4 semester hours from within the following options:

4

CS 2500 or higher, except CS 5010

CY 2000 or higher, except CY 4930

DS 2500 or higher, except DS 4900

MKTG 4606

Digital, Analytics, Technology, and Automation Research Practicum

Communication Studies Courses

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	
Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 1231	Principles of Organizational Communication	
COMM 1255	Communication in a Digital Age	
Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
Writing-Intensive Courses		
Complete two of the following:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3415	Communication Criticism	
COMM 3500	Environmental Issues, Communication, and the Media	
COMM 3501	Free Speech: Law and Practice	
COMM 3530	Communication and Sexualities	
COMM 3532	Theories of Conflict and Negotiation	
COMM 4535	Nonverbal Social Interaction	
COMM 4605	Youth and Communication Technology	
COMM 4631	Crisis Communication and Image Management	
Communication Studies Electives		
Complete four courses in the following range: ¹		16
COMM 1131 to COMM 4996		

¹ Junior/Senior Honors Project 1 (COMM 4970) is excluded.**Integrative Course**

Code	Title	Hours
CS 4120	Natural Language Processing	4
or COMM 2625	Communication, Technology, and Society	

Supporting Courses

Code	Title	Hours
Mathematics		
ECON 2350	Statistics for Economists	4
MATH 1341	Calculus 1 for Science and Engineering	4
Computing and Social Issues		
Complete one of the following:		4
AFCS 2600	Issues in Race, Science, and Technology	
CY 4170	The Law, Ethics, and Policy of Data and Digital Technologies	
CY 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
DS 1300	Knowledge in a Digital World	
or PHIL 1300	Knowledge in a Digital World	
HIST 2220	History of Technology	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The Twenty-First-Century Workplace	
SOCL 2485	Environment, Technology, and Society	
SOCL 4528	Technology and Society	

Writing Requirements

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
Complete one of the following:		4
COMM 3409	Advocacy Writing ²	
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3314	Advanced Writing in the Arts, Media, and Design	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

² If Advocacy Writing (COMM 3409) is selected, it will also satisfy a communication studies elective requirement. One additional general elective will be required in its place.

Required General Electives

Code	Title	Hours
Complete 20 semester hours of general electives.		20

NUpath Requirements Satisfied

- Advanced Writing in the Disciplines
- Analyzing and Using Data
- Conducting Formal and Quantitative Reasoning
- Demonstrating Thought and Action in a Capstone
- Employing Ethical Reasoning
- Engaging with the Natural and Designed World
- Interpreting Culture
- Understanding Societies and Institutions
- Writing in the First Year
- Writing-Intensive in the Major

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Communication Studies Grade Requirement

No more than two grades below a C in COMM courses may be used to fulfill degree requirements.

Khoury College GPA Requirement

Minimum cumulative 2.000 GPA required in all CS, CY, DS, and IS courses.

Communication Studies GPA Requirement

Minimum 2.000 GPA required in all COMM courses

Program Requirement

130 total semester hours required

Plan of Study**Sample Plans of Study****FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER FIRST HALF**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COMM 1101		4 COMM 1112 or 2301		4 MATH 1341		4 Elective	4
CS 1200	1	DS 2500 and DS 2501	5	Elective	4	Elective	4
CS 1800 and CS 1802	5	CS 3200	4				
CS 2000 and CS 2001	5	Elective	4				
ENGW 1111	4						
	19		17		8		8
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	Elective	4
DS 3500	4					COMM elective	4
DS 3000	4						
COMM foundation	4						
ECON 2350	4						
	17		0		0		8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COMM cluster	4	Co-op	0	Co-op	0	ENGW 3302 or 3315	4
COMM writing-intensive	4					COMM elective	4
DS 4200	4						
DS 4300	4						
	16		0		0		8
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COMM writing-intensive	4	COMM elective	4				
COMM elective	4	DS 4420	4				
Computing and social issues	4	CS 4120	4				
DS 4400	4	Khoury elective	4				
	16		16				

Total Hours: 133

FOUR YEARS, TWO CO-OPS IN SUMMER SECOND HALF/FALL

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COMM 1101		4 COMM 1112 or 2301		4 MATH 1341		4 Elective	4
CS 1200	1	DS 2500 and DS 2501	5	Elective	4	Elective	4

Total Hours: 133