

Data Science and Sociology, BS (Boston)

The data science and sociology combined major offers an integrative curriculum in the scientific study of society 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. Sociology provides students with the conceptual tools to understand how various features of society, including inequalities based on race, class, and gender, affect its members. This degree provides conceptual tools that can be used to foster social change and the empowerment of historically marginalized groups alongside the computing skills to manage large volumes of data in these areas.

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 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 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 options:		9-10
<i>Computer Science Option</i>		
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	
<i>Data Science Option</i>		
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
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 the following:		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	

Sociology Requirements

Code	Title	Hours
Required Sociology Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 3300	Social Theory	4
Research Methods		
SOCL 2321 or INSH 3101	Research Methods in Sociology Research Methods in the Social Sciences	4
Capstone		
SOCL 4600	Senior Seminar	4
Sociology Electives		
<i>Sociology Elective—Introductory</i>		
Complete two courses between SOCL 1000 and SOCL 2999 not used to satisfy another requirement.		8
<i>Sociology Elective—Intermediate</i>		
Complete three courses between SOCL 3000 and SOCL 4999 not used to satisfy another requirement.		12

Supporting Courses

Code	Title	Hours
Overview Course		
Must be taken in alignment with your home college:		
CS 1200 or SOCL 1000	First Year Seminar Sociology at Northeastern	1
CS 1210 or EESH 2000	Professional Development for Khoury Co-op Professional Development for Co-op	1
Mathematics		
MATH 1341	Calculus 1 for Science and Engineering	4
SOCL 2320 or INSH 3102	Statistical Analysis in Sociology Introduction to Statistics in the Social Sciences	4

Writing Courses

Code	Title	Hours
College Writing		
ENGW 1111 or ENGW 1102 or ENGW 1113 or ENGW 1114	First-Year Writing First-Year Writing for Multilingual Writers First-Year Writing Innovation Seminar First-Year Writing with Service-Learning	4
Advanced Writing in the Disciplines		
ENGW 3302 or ENGW 3308 or ENGW 3315	Advanced Writing in the Technical Professions Advanced Writing in the Social Sciences Interdisciplinary Advanced Writing in the Disciplines	4

Integrative Course

Code	Title	Hours
Complete one of the following:		4
SOCL 2485	Environment, Technology, and Society	
SOCL 4528	Technology and Society	

Required General Electives

Code	Title	Hours
Complete 28 semester hours of general electives.		28

NUpath Requirements Satisfied

- Advanced Writing in the Disciplines
- Analyzing and Using Data
- Conducting Formal and Quantitative Reasoning

- Demonstrating Thought and Action in a Capstone
- Engaging Differences and Diversity
- 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.

Khoury College GPA Requirement

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

Program Requirement

128 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
SOCL 1000 or CS 1200		1 SOCL 2320 or INSH 3102		4 MATH 1341		4 Vacation	
ENGW 1111	4	DS 2500 and DS 2501		5 General elective		4	
SOCL 1101	4	SOCL elective—introductory	4				
CS 1800 and CS 1802	5	General elective	4				
CS 2000 and CS 2001	5						
	19		17			8	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EESH 2000 or CS 1210	1	Co-op		0 Co-op		0 General elective	4
SOCL 2321 or INSH 3101	4					General elective	4
CS 3200	4						
DS 3500	4						
SOCL elective - introductory	4						
	17		0			0	8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 3300	4	Co-op		0 Co-op		0 General Elective	4
DS 3000	4			ENGW 3302, 3308, or 3315		4 General Elective	4
SOCL elective—intermediate	4						
General elective	4						
	16		0			4	8
Year 4							
Fall	Hours	Spring	Hours				
DS 4200	4	SOCL 4600	4				
SOCL elective—intermediate	4	SOCL elective—intermediate	4				
Integrative course	4	DS 4300	4				
Khoury elective	4	DS 4400	4				
	16		16				

Total Hours: 129

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

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 1000 or CS 1200		1 SOCL 2320 or INSH 3102		4 MATH 1341		4 Vacation	
ENGW 1111		4 DS 2500 and DS 2501		5 General elective		4	
SOCL 1101		4 SOCL elective—introductory		4			
CS 1800 and CS 1802		5 General elective		4			
CS 2000 and CS 2001		5					
	19		17		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 2321 or INSH 3101		4 EESH 2000 or CS 1210		1 General elective		4 Co-op	0
CS 3200		4 SOCL 3300		4 General elective		4	
SOCL elective - introductory		4 SOCL elective— intermediate		4			
DS 3500		4 General elective		4			
		DS 3000		4			
	16		17			8	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	DS 4200	4	General elective	4	Co-op	0
		SOCL elective—intermediate	4	General elective	4	ENGW 3302, 3308, or 3315	4
		Integrative course	4				
		Khoury elective	4				
	0		16		8		4

Year 4

	Fall	Hours	Spring	Hours
Co-op	0		SOCL 4600	4
			SOCL elective—intermediate	4
			DS 4300	4
			DS 4400	4
	0			16

Total Hours: 129