

# Data Science and Journalism, BS

The data science and journalism combined major offers students an opportunity to gain the skills to be able to engage in both the print and digital worlds of journalism. Students study the collection, manipulation, storage, retrieval, and computational analysis of data in its various forms, including numeric, textual, image, and video data. Combined with learning the principles, practices, and responsibilities of journalism, students can extract meaning from massive information flows and utilize it in effective investigative reporting.

## 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/>).

## Data Science Courses

Code	Title	Hours
<b>Computer Science Overview</b>		
CS 1200 or JRNL 1000	First Year Seminar Journalism at Northeastern	1
CS 1210 or EEAM 2000	Professional Development for Khoury Co-op Professional Development for Co-op	1
<b>Programming Sequence Pathways</b>		
Choose one of the two options:		12
<i>Computer Science Option</i>		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	
CS 3500 and CS 3501	Object-Oriented Design and Lab for CS 3500	
<i>Data Science Option</i>		
DS 2000 and DS 2001	Programming with Data and Data Science Programming Practicum	
DS 2500 and DS 2501	Intermediate Programming with Data and Lab for DS 2500	
DS 3500	Advanced Programming with Data	
<b>Computer Science Required Courses</b>		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 3200	Introduction to Databases	4
CY 4170	The Law, Ethics, and Policy of Data and Digital Technologies	4
<b>Data Science Foundations</b>		
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	Machine Learning and Data Mining 2	4

**Khoury Elective Courses**

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 of CS, CY, DS, or IS classes that are not already required. Choose courses within the following ranges: 4

CS 2500 or higher, except CS 5010

CY 2000 or higher, except CY 4930

DS 2500 or higher, except DS 4900

IS 2000 or higher, except IS 4900

**Journalism Major Requirements**

Students transferring from outside institutions must complete a minimum of five 4-semester-hour journalism courses at Northeastern, and these must include:

Code	Title	Hours
JRNL 2201	Journalism 2: Intermediate Reporting	
JRNL 2301	Visual Storytelling in Journalism	
JRNL 4650	Ethics and Diversity in the News Media	

Code	Title	Hours
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**Journalism Courses**

A grade of C or higher is required:

JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Writing and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4

**Required Journalism**

JRNL 1150	Understanding Today's News	4
JRNL 3550	The First Amendment and the Media	4
JRNL 4650	Ethics and Diversity in the News Media	4

**Journalism Electives**

Complete three JRNL courses. 12

**Supporting Courses**

Code	Title	Hours
<b>Mathematics Requirement</b>		
MATH 1341	Calculus 1 for Science and Engineering	4
<b>Statistics Foundation</b>		
ECON 2350	Statistics for Economists	4
<b>Computing and Social Issues</b>		
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	
HIST 2220	History of Technology	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
IS 1300 or PHIL 1300	Knowledge in a Digital World	
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 Requirement**

<b>Code</b>	<b>Title</b>	<b>Hours</b>
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**College Writing**

ENGW 1111	First-Year Writing	4
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**Advanced Writing in the Disciplines**

This course already fulfills a Journalism requirement above.

JRNL 2301	Visual Storytelling in Journalism	
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**Integrative Requirement**

<b>Code</b>	<b>Title</b>	<b>Hours</b>
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Complete one of the following:

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JRNL 3700	Data Storytelling	
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JRNL 5500	Coding for Digital Storytelling	
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**Required General Electives**

<b>Code</b>	<b>Title</b>	<b>Hours</b>
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Complete 20 semester hours of general electives.

20

**NUpath Requirements Satisfied**

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

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, IS courses

**Journalism GPA Requirement**

Minimum 2.000 GPA required in all JRNL courses

**Program Requirement**

131 total 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	Summer 2	Hours
CS 1200 or JRNL 1000		1 CS 3200		4 DS 3000		4 Elective			4
CS 1800 and CS 1802	5	DS 2500 and DS 2501		5 MATH 1341		4 Elective			4
DS 2000 and DS 2001	4	JRNL 1101 and JRNL 1102		5					
JRNL 1150	4	JRNL 3550		4					
ENGW 1111	4								
	<b>18</b>				<b>18</b>			<b>8</b>	<b>8</b>

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Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
DS 3500		4 CS 1210 or EEAM 2000		1 ECON 2350		4 Co-op	0
JRNL 2201		4 DS 4200		4 Elective		4	
JRNL 2301		4 DS 4300		4			
Computing and social issues		4 JRNL 3610		4			
		JRNL 3700 or 5500		4			
		<b>16</b>			<b>17</b>	<b>8</b>	<b>0</b>
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		0 DS 4400		4 Elective		4 Co-op	0
		JRNL 4650		4 Elective		4	
		JRNL elective 1		4			
		Khoury Elective		4			
		<b>0</b>			<b>16</b>	<b>8</b>	<b>0</b>
Year 4							
Fall	Hours	Spring	Hours				
Co-op		0 CY 4170		4			
		DS 4420		4			
		JRNL elective 2		4			
		JRNL elective 3		4			
		<b>0</b>			<b>16</b>		

Total Hours: 133

**Four Years, Two Co-ops in Spring/Summer 1**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200 or JRNL 1000		1 DS 2500 and DS 2501		5 DS 3000		4 Elective	4
CS 1800 and CS 1802		5 ECON 2350		4 MATH 1341		4 Elective	4
DS 2000 and DS 2001		4 JRNL 1101 and JRNL 1102		5			
JRNL 1150		4 JRNL 3550		4			
ENGW 1111		4					
		<b>18</b>			<b>18</b>	<b>8</b>	<b>8</b>
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				Elective	4
JRNL 2201		4					
JRNL 2301		4					
Computing and social issues		4					
		<b>17</b>			<b>0</b>	<b>0</b>	<b>8</b>
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
DS 4200		4 Co-op		0 Co-op		0 Khoury Elective	4
DS 4300		4				Elective	4
JRNL 3610		4					
JRNL 3700		4					
		<b>16</b>			<b>0</b>	<b>0</b>	<b>8</b>

<b>Year 4</b>			
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>
DS 4400		4 CY 4170	4
JRNL 4650		4 DS 4420	4
CS 3200		4 JRNL elective 2	4
JRNL elective 1		4 JRNL elective 3	4
	<b>16</b>		<b>16</b>

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**Total Hours: 133**