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
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 (http://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements/).

NUpath Requirements
All undergraduate students are required to complete the NUpath Requirements (http://catalog.northeastern.edu/undergraduate/university-academics/nupath/).

Data Science Courses

<table>
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<tr>
<th>Code</th>
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<tr>
<td><strong>Computer Science Overview</strong></td>
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<tr>
<td>CS 1200</td>
<td>First Year Seminar</td>
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<tr>
<td>or JRNL 1000</td>
<td>Journalism at Northeastan</td>
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<tr>
<td>CS 1210</td>
<td>Professional Development for Khoury Co-op</td>
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<tr>
<td>or EEAM 2000</td>
<td>Professional Development for Co-op</td>
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<td><strong>Programming Sequence Pathways</strong></td>
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<td>Choose one of the two options:</td>
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<tr>
<td><strong>Computer Science Option</strong></td>
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<tr>
<td>CS 2500</td>
<td>Fundamentals of Computer Science 1 and Lab for CS 2500</td>
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<tr>
<td>and CS 2501</td>
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<tr>
<td>CS 2510</td>
<td>Fundamentals of Computer Science 2 and Lab for CS 2510</td>
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<tr>
<td>and CS 2511</td>
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<tr>
<td>CS 3500</td>
<td>Object-Oriented Design and Lab for CS 3500</td>
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<tr>
<td>and CS 3501</td>
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<td><strong>Data Science Option</strong></td>
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<td>DS 2000</td>
<td>Programming with Data and Data Science Programming Practicum</td>
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<tr>
<td>and DS 2001</td>
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<tr>
<td>DS 2500</td>
<td>Intermediate Programming with Data and Lab for DS 2500</td>
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<tr>
<td>and DS 2501</td>
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<td>DS 3500</td>
<td>Advanced Programming with Data</td>
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<td><strong>Computer Science Required Courses</strong></td>
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<tr>
<td>CS 1800</td>
<td>Discrete Structures and Seminar for CS 1800</td>
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<tr>
<td>and CS 1802</td>
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<td>CS 3200</td>
<td>Database Design</td>
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<tr>
<td>CY 4170</td>
<td>The Law, Ethics, and Policy of Data and Digital Technologies</td>
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<td><strong>Data Science Foundations</strong></td>
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<tr>
<td>DS 3000</td>
<td>Foundations of Data Science</td>
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<td>DS 4200</td>
<td>Information Presentation and Visualization</td>
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<td>DS 4300</td>
<td>Large-Scale Information Storage and Retrieval</td>
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<td>DS 4400</td>
<td>Machine Learning and Data Mining 1</td>
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<td>DS 4420</td>
<td>Machine Learning and Data Mining 2</td>
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<td><strong>Khoury Elective Courses</strong></td>
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<tr>
<td>With adviser approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.</td>
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</table>
Complete 4 semester hours of CS, CY, DS, or IS classes that are not already required. Choose courses within the following ranges:

- 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:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>JRNL 2201</td>
<td>Journalism 2: Intermediate Reporting</td>
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<tr>
<td>JRNL 2301</td>
<td>Visual Storytelling in Journalism</td>
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<tr>
<td>JRNL 4650</td>
<td>Ethics and Issues in Journalism</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>JRNL 1101</td>
<td>Journalism 1: Fundamentals of Reporting and Writing and Journalist's Toolbox</td>
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<tr>
<td>JRNL 1102</td>
<td>Journalism 1: Fundamentals of Reporting and Writing and Journalist's Toolbox</td>
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<td>JRNL 2201</td>
<td>Journalism 2: Intermediate Reporting</td>
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<tr>
<td>JRNL 2301</td>
<td>Visual Storytelling in Journalism</td>
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<tr>
<td>JRNL 3610</td>
<td>Digital Storytelling and Social Media</td>
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**Required Journalism**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>JRNL 1150</td>
<td>Understanding Today's News</td>
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<tr>
<td>JRNL 3550</td>
<td>The First Amendment and the Media</td>
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<tr>
<td>JRNL 4650</td>
<td>Ethics and Issues in Journalism</td>
<td>4</td>
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</table>

**Journalism Electives**

Complete three JRNL courses.

**12**

**Supporting Courses**

**Mathematics Requirement**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>MATH 1341</td>
<td>Calculus 1 for Science and Engineering</td>
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**Statistics Foundation**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ECON 2350</td>
<td>Statistics for Economists</td>
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</table>

**Computing and Social Issues**

Complete one of the following:

- AFAM 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 Knowledge in a Digital World
- 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 Computers and Society

**Writing Requirement**

**College Writing**

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
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<td>ENGW 1111</td>
<td>First-Year Writing</td>
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**Advanced Writing in the Disciplines**
This course already fulfills a Journalism requirement above.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tr>
<td>JRNL 2301</td>
<td>Visual Storytelling in Journalism</td>
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**Integrative Requirement**

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<tr>
<th>Code</th>
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<td>Complete one of the following:</td>
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<tr>
<td>JRNL 3700</td>
<td>Data Storytelling</td>
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<tr>
<td>JRNL 5500</td>
<td>Coding for Digital Storytelling</td>
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**Required General Electives**

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>Complete 20 semester hours of general electives.</td>
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</table>

**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 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**

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Hours</th>
<th>Spring</th>
<th>Hours</th>
<th>Summer 1</th>
<th>Hours</th>
<th>Summer 2</th>
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<tbody>
<tr>
<td>CS 1200 or JRNL 1000</td>
<td>1 CS 3200</td>
<td>4</td>
<td>DS 3000</td>
<td>4</td>
<td>Vacation</td>
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<tr>
<td>CS 1800 and CS 1802</td>
<td>5 DS 2500 and DS 2501</td>
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<td>DS 2000 and DS 2001</td>
<td>4 JRNL 1101 and JRNL 1102</td>
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<td>JRNL 1150</td>
<td>4 JRNL 3550</td>
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**Year 2**

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<th>Summer 2</th>
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<td>4 CS 1210 or EEAM 2000</td>
<td>1 ECON 2350</td>
<td>4 Co-op</td>
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<td>4 DS 4200</td>
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<td>JRNL 2301</td>
<td>4 DS 4300</td>
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<td>Computing and social issues</td>
<td>4 JRNL 3610</td>
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Total Hours: 133