

Data Science and Business Administration, BS

The data science and business administration combined major integrates a technical degree with the theory and practice of management through active learning, problem-driven research, corporate partnerships, and experiential assignments. Students study 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. This program reflects the impact of data in modern business practice.

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
Computer Science Overview		
Must be taken in alignment with your home college:		
CS 1200 or BUSN 1102	First Year Seminar Personal Skill Development for Business	1
CS 1210 or BUSN 1103	Professional Development for Khoury Co-op Professional Development for Business Co-op	1
Programming Sequence Pathways		
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	
Computer Science Required Courses		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 3200	Introduction to Databases	4
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	Machine Learning and Data Mining 2	4

Khoury Elective

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

Complete four 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

Business Courses

Code	Title	Hours
Required Business Courses		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Profit Analysis for Managers and Advisors	4
FINA 2201	Financial Management	4
INTB 1203	International Business and Global Social Responsibility	4
MKTG 2201	Introduction to Marketing	4
ORGB 3201	Organizational Behavior	4
Business Elective		
Complete one of the following:		4
INNO 2301	Innovation!	
MISM 2301	Introduction to Information Systems and Digital Technologies	
SCHM 2301	Supply Chain and Operations Management	
STRT 4501	Strategy in Action	

Business Concentration

Complete a four-course business concentration from the following list.

- Accounting (<https://catalog.northeastern.edu/undergraduate/business/concentrations/accounting/>)
- Accounting and Advisory Services (<https://catalog.northeastern.edu/undergraduate/business/concentrations/accounting-advisory-services/>)
- Brand Management (<https://catalog.northeastern.edu/undergraduate/business/concentrations/brand-management/>)
- Corporate Innovation (<https://catalog.northeastern.edu/undergraduate/business/concentrations/corporate-innovation/>)
- Entrepreneurial Startups (<https://catalog.northeastern.edu/undergraduate/business/concentrations/entrepreneurial-startups/>)
- Family Business (<https://catalog.northeastern.edu/undergraduate/business/concentrations/family-business/>)
- Finance (<https://catalog.northeastern.edu/undergraduate/business/concentrations/finance/>)
- Fintech (<https://catalog.northeastern.edu/undergraduate/business/concentrations/fintech/>)
- Healthcare Management and Consulting (<https://catalog.northeastern.edu/undergraduate/business/concentrations/healthcare-management-consulting/>)
- International Business (<https://catalog.northeastern.edu/undergraduate/business/concentrations/international-business/>) (available only as a second concentration)
- Management (<https://catalog.northeastern.edu/undergraduate/business/concentrations/management/>)
- Marketing (<https://catalog.northeastern.edu/undergraduate/business/concentrations/marketing/>)
- Marketing Analytics (<https://catalog.northeastern.edu/undergraduate/business/concentrations/marketing-analytics/>)

Note: If the Marketing Analytics concentration is selected, an additional general elective is required.

- Social Innovation and Entrepreneurship (<https://catalog.northeastern.edu/undergraduate/business/concentrations/social-innovation-entrepreneurship/>)
- Supply Chain Management (<https://catalog.northeastern.edu/undergraduate/business/concentrations/supply-chain-management/>)

Integrative Course

Code	Title	Hours
MKTG 4604	Creating Business Value with Data and AI Technologies	4

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1341 or MATH 1231	Calculus 1 for Science and Engineering Calculus for Business and Economics	4
Statistics		
MGSC 2301	Business Statistics	4
Economics		
ECON 1115 or ECON 1116	Principles of Macroeconomics Principles of Microeconomics	4

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302 or ENGW 3304 or ENGW 3315	Advanced Writing in the Technical Professions Advanced Writing in the Business Administration Professions Interdisciplinary Advanced Writing in the Disciplines	4

Required General Electives

Code	Title	Hours
	Complete 16 semester hours of general electives.	16

Business Cooperative Education

Complete one cooperative education experience.

Khoury College GPA Requirement

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

Business GPA Requirement

Minimum 2.000 GPA required in business courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Ethical Reasoning
- Interpreting Culture
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- 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.

Program Requirement

130 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	Hours
ACCT 1201		4 CS 3200		4 ACCT 2301		4 FINA 2201		4
CS 1200 or BUSN 1102		1 DS 2500 and DS 2501		5 Elective		4 Elective		4
CS 1800 and CS 1802		5 ECON 1115 or 1116		4				
DS 2000 and DS 2001		4 MATH 1341 or 1231		4				
ENGW 1111		4						
		18		17		8		8
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
DS 3000		4 CS 1210 or BUSN 1103		1 MKTG 2201		4 Co-op		
DS 3500		4 DS 4200		4 Elective		4		
INTB 1203		4 DS 4300		4				
MGSC 2301		4 Business Elective		4				
		Elective		4				
		16		17		8		0
Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
Co-op		DS 4400		4 ORGB 3201		4 Co-op		
		ENGW 3302		4 Business concentration 2		4		
		Business concentration 1		4				
		Khoury elective		4				
		0		16		8		0
Year 4								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
Co-op		DS 4420		4				
		MKTG 4604		4				
		Business concentration 3		4				
		Business concentration 4		4				
		0		16				

Total Hours: 132

Sample Plan of Study: Four Years, Two Co-ops in Spring/Summer 1

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
ACCT 1201		4 CS 3200		4 ACCT 2301		4 FINA 2201		4
CS 1200 or BUSN 1102		1 DS 2500 and DS 2501		5 Elective		4 Elective		4
CS 1800 and CS 1802		5 ECON 1115 or 1116		4				
DS 2000 and DS 2001		4 MATH 1341 or 1231		4				
ENGW 1111		4						
		18		17		8		8
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
CS 1210		1 Co-op		Co-op		MKTG 2201		4
DS 3000		4				Elective		4

DS 3500	4							
INTB 1203	4							
MGSC 2301	4							
	17			0			0	8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
DS 4200	4	Co-op		Co-op		ORGB 3201	4
DS 4300	4					Elective	4
Business Elective	4						
Business concentration 1	4						
	16			0		0	8

Year 4

Fall	Hours	Spring	Hours
DS 4400	4	DS 4420	4
ENGW 3302	4	MKTG 4604	4
Business Concentration 2	4	Business concentration 3	4
Khoury Elective	4	Business concentration 4	4
	16		16

Total Hours: 132