Data Science and Business Administration, BS

The data science and business 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

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/).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	First Year Seminar	1
or BUSN 1102	Personal Skill Development for Business	
CS 1210	Professional Development for Khoury Co-op	1
or BUSN 1103	Professional Development for Business Co-op	
Programming Sequence Pathways		
Choose one of the two options.		12
Computer Science Option		
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	
Data Science Option		
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	Database Design	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 credits 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	Managerial Accounting	4
FINA 2201	Financial Management	4
INTB 1203	International Business and Global Social Responsibility	4
MGSC 2301	Business Statistics	4
MKTG 2201	Introduction to Marketing	4
ORGB 3201	Organizational Behavior	4
Complete one of the following:		4
ENTR 2301	Innovation!	
MISM 2301	Management Information Systems	
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 (http://catalog.northeastern.edu/undergraduate/business/concentrations/accounting/)
- Accounting and Advisory Services (http://catalog.northeastern.edu/undergraduate/business/concentrations/accounting-advisory-services/)
- Brand Management (http://catalog.northeastern.edu/undergraduate/business/concentrations/brand-management/)
- Business Analytics (http://catalog.northeastern.edu/undergraduate/business/concentrations/business-analytics/)
- Corporate Innovation (http://catalog.northeastern.edu/undergraduate/business/concentrations/corporate-innovation/)
- Entrepreneurial Startups (http://catalog.northeastern.edu/undergraduate/business/concentrations/entrepreneurial-startups/)
- Family Business (http://catalog.northeastern.edu/undergraduate/business/concentrations/family-business/)
- Finance (http://catalog.northeastern.edu/undergraduate/business/concentrations/finance/)
- Fintech (http://catalog.northeastern.edu/undergraduate/business/concentrations/fintech/)
- Healthcare Management and Consulting (http://catalog.northeastern.edu/undergraduate/business/concentrations/healthcare-management-consulting/)
- International Business (http://catalog.northeastern.edu/undergraduate/business/concentrations/international-business/) (available only as a second concentration)
- Management (http://catalog.northeastern.edu/undergraduate/business/concentrations/management/)
- Marketing (http://catalog.northeastern.edu/undergraduate/business/concentrations/marketing/)
- Marketing Analytics (http://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 (http://catalog.northeastern.edu/undergraduate/business/concentrations/social-innovation-entrepreneurship/)
- Supply Chain Management (http://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	Calculus 1 for Science and Engineering	4
or MATH 1231	Calculus for Business and Economics	
Economics		

| ECON 1115 | Principles of Macroeconomics | 4 |
| or ECON 1116 | Principles of Microeconomics | |

Computer Science Writing Requirement

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

Required General Electives

Code	Title	Hours
Complete 16 credits of general electives.		16

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Khoury College GPA Requirement

Minimum 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
CS 1200	1	CS 2510 and CS 2511	5	CS 3500 and CS 3501	5	Vacation	
CS 1800 and CS 1802	5	CS 3200	4	ACCT 2301	4		
CS 2500 and CS 2501	5	MATH 1341	4				
ACCT 1201	4	ECON 1115	4				
ENGW 1111	4						
	19		17		9		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MGSC 2301	4	CS 1210	1	MKTG 2201	4	Co-op	
DS 3000	4	DS 4200	4	Elective	4		
INTB 1203	4	DS 4300	4				
Elective	4	Business concentration 1	4				
		Elective	4				
	16		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		DS 4400	4	FINA 2201	4	Co-op	
		SCHM 2301	4	ORGB 3201	4		
		Business concentration 2	4				
		Khoury elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	
Co-op		DS 4420	4	ENGW 3302	4	
		Business concentration 3	4	Elective	4	
		MKTG 4604	4			
		Business concentration 4	4			
	0		16		8	

Total Hours: 134