Data Science and Business Administration, BS (Boston)

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

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	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	
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		
Choose one of the two options:		9
Computer Science Option		
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	
Data Science Option		
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
DS 4420	Machine Learning and Data Mining 2	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 within the following options:		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	

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
or ORGB 3203	Behavioral Aspects of Digital Transformation	
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/)
- 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	Calculus 1 for Science and Engineering	4
or MATH 1231	Calculus for Business and Economics	
or MATH 1241	Calculus 1	

or MATH 1245	Calculus with Applications	
or MATH 1251	Calculus and Differential Equations for Biology 1	
or MATH 1340	Intensive Calculus for Engineers	
Statistics		
MGSC 2301	Business Statistics	4
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 semester hours of general electives.		16

Business Experiential Learning

Code	Title	Hours
Complete at least one of the following experiences:		0-8
BUSN 4945	In-the-Field Experiential Professional Practicum	
COOP 3945	Co-op Work Experience	
COOP 3946	Co-op Work Experience--Half Time	
COOP 3947	Co-op Work Experience Abroad--Half Time	
COOP 3948	Co-op Work Experience Abroad	
EEBA 2945	Internship Experience	
EEBA 2948	Internship Experience Abroad	

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

- Advanced Writing in the Disciplines
- Analyzing and Using Data
- Conducting Formal and Quantitative Reasoning
- Demonstrating Thought and Action in a Capstone
- Engaging with the Natural and Designed World
- Ethical Reasoning
- 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.

Program Requirement

130 total semester hours required

Plan of Study

Sample Plans of Study

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

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	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	General Elective	4	General Elective	4
CS 1800 and CS 1802	5	ECON 1115 or 1116	4				
CS 2000 and CS 2001	5	MATH 1341 or 1231	4				
ENGW 1111	4						
	19		17		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
DS 3500	4	CS 1210 or BUSN 1103	1	MKTG 2201	4	Co-op	0
INTB 1203	4	DS 4300	4	General Elective	4		
MGSC 2301	4	DS 4200	4				
DS 3000	4	Business Elective	4				
		General Elective	4				
	16		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	DS 4400	4	ENGW 3302	4	Co-op	0
		Business concentration 1	4	ORGB 3201 or 3203	4		
		Khoury Elective	4	Business concentration 2	4		
	0		12		12		0

Year 4

Fall	Hours	Spring	Hours
Co-op	0	DS 4420	4
		MKTG 4604	4
		Business concentration 3	4
		Business concentration 4	4
	0		16

Total Hours: 133

FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER FIRST HALF

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	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	General Elective	4	General Elective	4
CS 1800 and CS 1802	5	ECON 1115 or 1116	4				
CS 2000 and CS 2001	5	MATH 1341 or 1231	4				
ENGW 1111	4						
	19		17		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	MKTG 2201	4
DS 3500	4					General Elective	4
INTB 1203	4						

	Hours		Hours		Hours		Hours
MGSC 2301	4						
DS 3000	4						
	17		**0**		**0**		**8**

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
DS 4200	4	Co-op	0	Co-op	0	ORGB 3201 or 3203	4
DS 4300	4					General 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: 133