

# Data Science and Health Science, BS

The health science and computer science combined major offers a solid academic and experiential foundation integrating studies in health administration, computer science, mathematics, and statistics. This program reflects the impact of data in modern healthcare and prepares students for success in careers in health administration, community-based health promotion, public health, and big data analysis.

## 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.

## University-Wide Requirements

All undergraduate students are required to complete the University-Wide 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 Requirements

Code	Title	Hours
<b>Computer Science Overview</b>		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
<b>Discrete Structures</b>		
A grade of C- or higher is required:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
<b>Computer Science Foundation</b>		
A minimum grade of C- must be earned in CS 2500 and CS 2510.		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 3500	Object-Oriented Design	4
CS 3200	Database Design	4
<b>Information Science Requirement</b>		
IS 4300	Human Computer Interaction	4
<b>Data Science Foundations</b>		
DS 4100	Data Collection, Integration, and Analysis	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

## Supporting Courses for Data Science

Code	Title	Hours
MATH 1341 or MATH 1241	Calculus 1 for Science and Engineering Calculus 1	4

## Data Science Writing Requirement

Code	Title	Hours
<b>College Writing</b>		
ENGW 1111 or ENGW 1102	First-Year Writing First-Year Writing for Multilingual Writers	4
<b>Advanced Writing in the Disciplines</b>		
ENGW 3302 or ENGW 3315	Advanced Writing in the Technical Professions Interdisciplinary Advanced Writing in the Disciplines	4

## Health Science Requirements

Code	Title	Hours
<b>Public Health Core</b>		
PHTH 1260	The American Healthcare System	4
PHTH 2300	Communication Skills for the Health Professions	4
PHTH 2350	Community and Public Health	4
PHTH 2515	Healthcare Policy and Administration	4
PHTH 4120	Global Perspectives on Discrimination and Health	4
PHTH 4540	Health Education and Program Planning	4

## Supporting Courses for Health Science

Code	Title	Hours
<b>Research Methods</b>		
Complete one of the following:		4
HLTH 5450	Healthcare Research	
IS 4800	Empirical Research Methods	
<b>Statistics</b>		
Complete one of the following:		4
PHTH 2210	Foundations of Biostatistics	
PSYC 2320	Statistics in Psychological Research	
ECON 2350	Statistics	
ENVR 2500	Biostatistics	
MATH 3081	Probability and Statistics	
<b>Philosophy</b>		
Complete one of the following:		4
PHIL 1145	Technology and Human Values	
PHIL 1165	Moral and Social Problems in Healthcare	
<b>Life Sciences Core</b>		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5

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CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5
PSYC 1101	Foundations of Psychology	4

### **Integrative Requirement**

<b>Code</b>	<b>Title</b>	<b>Hours</b>
<b>Upper-Division Elective</b>		
Complete one from the following:		4
CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		
PHTH 4000 or higher		
HSCI 4000 or higher		
<b>Integrative Course</b>		
DS 4900	Data Science Senior Project	4

### **Required General Electives**

<b>Code</b>	<b>Title</b>	<b>Hours</b>
Complete three general electives.		12

### **Data Science GPA Requirement**

Minimum 2.000 GPA required in all computer, data, and information science courses.

### **Program Requirement**

136 semester hours required