

Minor in Data Science

This data science minor is an interdisciplinary course of study that uses standard scientific methods, algorithms, statistics, and data analysis. A defining quality of data science and this minor is the application of these tools to large amounts of data in an increasingly powerful computing environment. The techniques involved in data science include data extraction, data cleansing, organizing data, discovering hidden patterns, trends, and anomalies in data, transforming data into knowledge, modeling, data visualization, and the communication of results. This data science minor can be used to enhance any major with a connection to data science and is specifically designed to allow easy entry for students with no prior exposure to statistics or computer science.

None.

University Core Curriculum Requirements

General Education Distribution Area	Cr. Hrs.
Fine Arts (FA)*	6
2 courses, from at least two of the following areas of study: Art, CMT (Mass Media or Theatre), Music (includes Dance).	
Humanities (HU)*	9
3 courses, from at least two of the following areas of study: CMT (Communication), English, Linguistics, Philosophy, Women's and Gender Studies, World Languages and Cultures, (Note: No more than two foreign language courses may be used to fulfill this requirement.)	
Behavioral/Social Sciences (SB)*	9
3 courses, from at least two of the following areas of study: African & African American Studies, Anthropology, Computer Science, Economics, Geography & Environmental Studies, History, Justice Studies, Latino & Latin American Studies, Political Science, Psychology, Sociology, Social Work	
Natural Sciences (NS and NSL)**	9
3 courses, from at least two of the following areas of study; one course must have a laboratory component (NSL): Biology, Chemistry, Earth Science, Environmental Science, Physics (Note: If an FYE ANTH that counts as Natural Science is taken, only one Biology course may be used for Natural Science).	

Engaged Learning Experiences

Students must complete, at Northeastern, three courses designated as Engaged Learning Experiences courses. One of the Engaged Learning Experiences courses must be at the 300-level, and one Engaged Learning Experiences course must be designated as "Boundary Crossing".

Discipline Specific (ELE-DS)

These courses have pre-requisites that are specific courses within a program of study. Discipline Specific courses give students a deeper understanding of how knowledge is created and applied in their field.

Boundary Crossing (ELE-X)

These are courses that cross disciplinary boundaries and/or cross boundaries through engagements outside the classroom or University allowing students to see how knowledge gained in one field might inform other fields or other aspects of society.

Math/Quantitative Reasoning (MA)

1 Math course, that has intermediate Algebra as prerequisite OR is a course listed on the General Education Distributive Learning List of Approved Courses. Any 3 hour college level math course, beyond Intermediate Algebra, meets this requirement.

* Majors in Fine Arts, Humanities or Social/Behavioral Sciences, may waive up to 6 credit hours of General Education requirements in the corresponding distribution area.

** Majors in Natural Sciences may waive up to 9 credit hours of General Education requirements in the Natural Sciences distribution area.

Students should also be aware of all other university requirements to obtain a degree - NEIU requirements (<http://catalog.neiu.edu/graduation-requirements/bachelors-degree/>)

Required Courses:

Code	Title	Hours
PHYS/ESCI/ENVI/CS/MNGT/ CHEM-180	Fundamentals Of Data Science	4
CS-200	Programming Fundamentals	4
MATH-275 or MATH-305	Applied And Computational Statistics Probability And Statistics	4
CS-351	Data Wrangling For Data Analysis (or MCDC practicum course)	3

Two courses of at least 6 total credit hours should be selected from the list below.

Code	Title	Hours
ECON-318	Introduction To Econometrics And Forecasting	3
ECON-346	Applied Economic Statistics Using R	3
ENVI-301	Methods In Environmental Science	4
ESCI-355	Introduction To Geophysics	4
GES-351	Spatial Statistics	3
GES-391	Introduction To GIS	3
GES-393	GIS Modeling And Programming	3
MATH-305 or MATH-275	Probability And Statistics (Must be different than the course taken in the required core.) Applied And Computational Statistics	4
MATH-336	Statistical Inference	4
MATH-365	Statistical Computer And Data Analysis Packages	3
PHYS-309	Computing For Scientists	3
PHYS-330	Writing Intensive Program: Experimental Methods	3
PSYC-302	Statistics And Research Methods II	3
PSYC-303	Advanced Statistics	3
CS-315	Modern Database Management	3
CS-322	Applied Research And Statistical Data Analysis	3
CS-335	Artificial Intelligence	3
CS-342	Introduction To Human Computer Interaction	3
CS-343	Introduction To Natural Language Processing	3
CS-349	Introduction To The Internet Of Things	3
CS-359	Machine Learning	3
MNGT-351	Data Visualization And Management	3
MNGT-352	Model-Based Decision Making	3
MNGT-379	Business Analytics	3
MNGT-369	Introduction To Data Science	3