

Analytics, BS (Oakland)

Employers seeking analytics professionals with “moderate” levels of data analysis skills - typically positions at the bachelor’s level – most often prefer candidates with *Analytics* as a field of study. Skills frequently required in candidates are data analysis and the ability to interpret and communicate data analysis results to others, problem solving, mastery of spreadsheets, analysis tools, statistical software, relational databases as well as programming language. The general demand for Teamwork/Collaboration and Project Management reflects the need for employers to find analytics professionals with general business skills which can be used in a variety of function areas.

The Bachelor of Science in Analytics helps to meet the demand from employers with an undergraduate program and entry level education requirements that prepares learners as data analyst practitioners capable of applying data analysis methods, technological, professional, and strategic expertise necessary for supporting decision making in organizations. With emphasis on experiential learning, the program provides dynamic opportunities for learners with varying degrees of work experience to practice their knowledge both globally and collaboratively while implementing effective data analysis concepts to real-life company demands.

The program has general foundation courses (including mathematical and philosophical logic), specific data analysis foundation courses, major required courses, as well as a variety of elective courses on diverse domain areas.

Program Requirements

Complete all courses listed below unless otherwise indicated.

Universitywide Requirement

Minimum 120 total semester hours required

Minimum 2.000 GPA required

Students must earn a minimum of 60 Northeastern University semester hours in order to receive a bachelor’s degree.

Note: Individual program requirements may exceed the above minima.

CPS Undergraduate Core Requirements

All College of Professional Studies undergraduate students are required to complete the CPS Undergraduate Core Requirements (<https://catalog.northeastern.edu/professional-studies/university-academics/general-education-requirements/>).

Foundation Courses

30 semester hours required

Code	Title	Hours
Computer Engineering Technology		
CET 2200	Data Structures and Algorithms	3
English		
ENG 1105 and ENG 1106	College Writing 1 and Lab for ENG 1105	4
ENG 1107 and ENG 1108	College Writing 2 and Lab for ENG 1107	4
ENG 3105 and ENG 3106	Writing for the Professions: Science and Engineering and Lab for ENG 3105	4
Information Technology		
ITC 2016	End-User Data Analysis Tools	3
Management		
MGT 1100 or MGT 2210	Introduction to Business Information within the Enterprise	3
Mathematics		
MTH 1100	College Algebra	3
MTH 2400	Technology and Applications of Discrete Mathematics	3
Philosophy		
Complete one of the following:		3
ITC 3620	Legal and Ethical Issues in Cybersecurity	

PHL 2100	Business Ethics
PHL 2140	Ethical Issues in Science and Engineering

Major Required Courses

33 semester hours required

Code	Title	Hours
Analytics		
ALY 2010	Probability Theory and Introductory Statistics	3
ALY 2100	Introduction to Programming for Data Analytics	3
ALY 3015	Intermediate Statistics for Data Analytics	3
ALY 3040	Data Mining	3
ALY 3070	Communication and Visualization for Data Analytics	3
ALY 3110	Big Data and Web Mining	3
ALY 4000	Analytics Using R	3
ALY 4020	Predictive Analytics Using R and Python	3
Information Technology		
ITC 2300	Database Management Systems	3
ITC 3320	Data Warehousing Technologies	3
ITC 3300	Structured Query Language (SQL)	3
or ITC 3310	Exploring NoSQL Databases	

Professional Electives

Code	Title	Hours
Complete 30 semester hours in the following subject areas below:		30
ALY, AVM, BTC, CET, FIN, GET, HMG, ITC, LDR, MGT, MKT, PJM		
Suggested Electives:		
ACC 2100	Financial Accounting	
HRM 2320	Human Resources Management	
MKT 2100	Principles of Marketing	
PJM 1100	Project Management Fundamentals - Project Initiation and Close	

Capstone

3 semester hours required

Code	Title	Hours
ALY 4850	Analytics Capstone	3

Concentration or Electives Option

A concentration is not required. Students may complete the electives option in lieu of the concentration.

- Applied AI (p. 2)
- Electives Option (p. 3)

Note: Please consult with your advisor.

CONCENTRATION IN APPLIED AI

Code	Title	Hours
Complete the following courses:		
ALY 2550	Generative AI	3
ALY 3510	AI Foundations: An Interdisciplinary Approach	3
ALY 4520	MLOps: Operationalizing AI	3
ALY 4570	Social Impacts and Issues of AI	3
Complete one ALY or ITC course that has not been taken to fulfill major or concentration requirements.		3

ELECTIVES OPTION

Code	Title	Hours
Complete a minimum of 24 semester hours to reach 120 semester hours. Courses from the major may not double count for Electives.		
Plan of Study		
Term 1	Hours	
MTH 1100		3
CET 2200		3
PHL 2100, 2140, or ITC 3620		3
MGT 1100 or 2210		3
ENG 1105 and ENG 1106		4
		16
Term 2	Hours	
ITC 2300		3
ALY 2010		3
ENG 1107 and ENG 1108		4
MTH 2400		3
Open Elective		3
		16
Term 3	Hours	
ALY 3015		3
ITC 2016		3
ENG 3105 and ENG 3106		4
Open Elective		3
Open Elective		3
		16
Term 4	Hours	
ALY 2100		3
ALY 3040		3
Concentration or major elective		3
Concentration or major elective		3
Open Elective		3
		15
Term 5	Hours	
ALY 3070		3
ITC 3320		3
Concentration or major elective		3
Concentration or major elective		3
Open elective		3
		15
Term 6	Hours	
ALY 3110		3
ALY 4000		3
ITC 3300 or 3310		3
Concentration or major elective		3
Open Elective		3
		15
Term 7	Hours	
ALY 4020		3

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Concentration or major elective	3
Concentration or major elective	3
Concentration or major elective	3
Open Elective	3
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15	
Term 8	Hours
ALY 4850	3
Concentration or major elective	3
Concentration or major elective	3
Open Elective	3
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12	
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Total Hours: 120	