

BS in Data Science with a Business Analytics Concentration

To earn a Bachelor of Science in Data Science with a Business Analytics Concentration from UIC, students need to complete university, college, and department degree requirements. The Department of Computer Science degree requirements are outlined below. Students should consult the [College of Engineering](#) section for additional degree requirements and college academic policies.

Code	Title	Hours
Summary of Requirements		
General and Basic Education Requirements		37
Core Courses		57
Business Analytics Concentration Requirements		18
Free Electives		8
Total Hours		120

General and Basic Education Requirements

Code	Title	Hours
ENGL 160	Academic Writing I: Writing in Academic and Public Contexts	3
ENGL 161	Academic Writing II: Writing for Inquiry and Research	3
Foreign Language		8
Understanding the Individual and Society course ^a		3
Understanding U.S. Society course ^a		3
Exploring World Cultures course ^a		3
Understanding the Creative Arts course ^a		3
Understanding the Past course ^a		3
Two Analyzing the Natural World courses (with lab) ^{a,b}		8
Total Hours		37

^a Students should consult the [General Education](#) section of the catalog for a list of approved courses.

^b Students planning to pursue the [Bioinformatics Concentration](#) will take BIOS 110 and BIOS 120 to fulfill the Analyzing the Natural World requirement.

Core Courses

Code	Title	Hours
Required Courses		
ENGR 100	Engineering Orientation (no graduation credit)	1
MATH 180	Calculus I	4
MATH 181	Calculus II	4
MATH 210	Calculus III	3
MATH 310	Applied Linear Algebra	3
CS 111	Program Design I	3
CS 141	Program Design II	3
CS 151	Mathematical Foundations of Computing	3

or MCS 361	Discrete Mathematics	
CS 211	Programming Practicum	2
CS 251	Data Structures	4
CS 377	Communication and Ethical Issues in Computing	3
Select one of the following:		3
STAT 381	Applied Statistical Methods I	
IE 342	Probability and Statistics for Engineers ^a	
ECE 341	Probability and Random Processes for Engineers ^b	
STAT 382	Statistical Methods and Computing	3
or IDS 462	Statistical Software for Business Applications	
STAT 385	Elementary Statistical Techniques for Machine Learning and Big Data	3
STAT 481	Applied Statistical Methods II	3
IDS 312	Business Project Management	3
IDS 435	Optimization for Analytics	3
CS 418	Introduction to Data Science ^c	3
or IDS 472	Business Data Mining	
CS 480	Database Systems ^c	3
or IDS 410	Business Database Technology	
Total Hours		57

^a IE 342 must be taken for the Concentration in Industrial Engineering.

^b ECE 341 must be taken for the Concentration in Data Processing, Science, and Engineering.

^c CS 418 and CS 480 must be taken for the Concentration in Computer Science.

Business Analytics Concentration Requirements

Code	Title	Hours
Required Courses		
Select 12 hours from the following:		12
IDS 400	Programming for Data Science in Business	
IDS 420	Business Model Simulation	
IDS 422	Text Mining for Business Applications	
IDS 460	Survey Sampling: Theory and Methods	
IDS 473	Risk Management and Insurance	
IDS 476	Business Forecasting Using Time Series Methods	

Business Foundation

Select 6 hours from the following:		6
ACTG 210	Introduction to Financial Accounting	
FIN 301	Introduction to Managerial Finance	
MKTG 360	Introduction to Marketing	
IDS 355	Operations Management	
MGMT 340	Introduction to Organizations	

Optional Electives

ACTG 210	Introduction to Financial Accounting	
ACTG 211	Introduction to Managerial Accounting	
FIN 301	Introduction to Managerial Finance	
FIN 310	Investments	

FIN 416	Options and Futures Markets
FIN 480	Securities Markets and High-Frequency Trading
IDS 450	Supply Chain Planning and Logistics
IDS 454	Introduction to Supply Chain Management
IDS 479	Enterprise Risk Management
MGMT 340	Introduction to Organizations
MKTG 360	Introduction to Marketing
MKTG 460	Marketing Analytics
MKTG 462	Marketing Research
MKTG 479	Digital and Social Media Marketing
Total Hours	18

Free Electives

Code	Title	Hours
Electives		
Select 8 hours of Free Electives.		8
Total Hours		8

Sample Course Schedule

Course	Title	Hours
First Year		
First Semester		
CS 111	Program Design I	3
ENGL 160	Academic Writing I: Writing in Academic and Public Contexts	3
MATH 180	Calculus I	4
Analyzing the Natural World (with Lab)	General Education course	4
ENGR 100	Engineering Orientation	1
Hours		15
Second Semester		
CS 141	Program Design II	3
ENGL 161	Academic Writing II: Writing for Inquiry and Research	3
MATH 181	Calculus II	4
General Education Core course		3
Foreign Language		4
Hours		17
Second Year		
First Semester		
CS 151 or MCS 361	Mathematical Foundations of Computing or Discrete Mathematics	3
CS 211	Programming Practicum	2
STAT 381 or IE 342 or ECE 341	Applied Statistical Methods I or Probability and Statistics for Engineers or Probability and Random Processes for Engineers	3
Analyzing the Natural World (with lab)	General Education course	4
Foreign Language		4
Hours		16

Second Semester		
CS 251	Data Structures	4
STAT 382 or IDS 462	Statistical Methods and Computing or Statistical Software for Business Applications	3
IDS 312	Business Project Management	3
MATH 210	Calculus III	3
General Education Core course		3
Hours		16

Third Year

First Semester		
CS 377	Communication and Ethical Issues in Computing	3
CS 480 or IDS 410	Database Systems or Business Database Technology	3
STAT 385	Elementary Statistical Techniques for Machine Learning and Big Data	3
MATH 310	Applied Linear Algebra	3
General Education Core course		3
Hours		15
Second Semester		
CS 418 or IDS 472	Introduction to Data Science or Business Data Mining	3
STAT 481	Applied Statistical Methods II	3
IDS 435	Optimization for Analytics	3
Concentration Requirement		3
Concentration Requirement		3
Hours		15

Fourth Year		
First Semester		
Concentration Requirement		3
Concentration Requirement		3
General Education Core course		3
Free Elective		4
Hours		13
Second Semester		
Concentration Requirement		3
Concentration Requirement		3
General Education Core course		3
Free Elective		4
Hours		13

Hours		13
Total Hours		
		120