BS in Data Science with Applied Economic Analysis Concentration

Degree Requirements

To earn a Bachelor of Science in Data Science with an Applied Economic Analysis 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		34
Core Courses		57
Applied Economics Analysis Concentration Requirements		15-16
Free Electives		13-14
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 [a]		8
Understanding the Individual and Society course [b,c]		0-3
Understanding U.S. Society course [b,c]		0-3
Exploring World Cultures course [b]		3
Understanding the Creative Arts course [b]		3
Understanding the Past course [b]		3
Two Analyzing the Natural World courses (with lab) [b,d]		8
Total Hours		**34**

a *Additional information on the COE's foreign language policy can be found in the College of Engineering section of the catalog.*

b *Students should consult the General Education section of the catalog for a list of approved courses.*

c *Students pursing the Applied Economic Analysis Concentration will use ECON 120 toward either the Understanding the Individual and Society or the Understanding U.S. Society requirement.*

d *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 Success Seminar for Freshmen [a]	1
or ENGR 101	Engineering Success Seminar for Transfer Students	
MATH 180	Calculus I	4
MATH 181	Calculus II	4
MATH 210	Calculus III	3
MATH 218	Applied Linear Algebra	3
Select one of the following		3
CS 111	Program Design I	
CS 112	Program Design I in the Context of Biological Problems	
CS 113	Program Design I in the Context of Law and Public Policy	
CS 141	Program Design II	3
CS 151	Mathematical Foundations of Computing	3
or MCS 361	Discrete Mathematics	
CS 211	Programming Practicum	3
CS 251	Data Structures	4
CS 377	Ethical Issues in Computing	3
Select one of the following:		3
STAT 381	Applied Statistical Methods I	
IE 342	Probability and Statistics for Engineers [b]	
ECE 341	Probability and Random Processes for Engineers [c]	
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 [d]	3
or IDS 472	Business Data Mining	
CS 480	Database Systems [c]	3
or IDS 410	Business Database Technology	
Total Hours		**57**

a *ENGR 100 and ENGR 101 are one-semester-hour courses, but the hour does not count toward the total required for graduation.*

Applied Economic Analysis Concentration Requirements

Code	Title	Hours
Required Courses		
ECON 120	Principles of Microeconomics [a]	3-4
ECON 220	Microeconomics: Theory and Applications	3
ECON 400	Honors Econometrics	3
Select two of the following:		6
ECON 331	Labor Economics	
ECON 334	Economic Development	
ECON 370	Environmental Economics	
ECON 453	Economics of Family	
ECON 475	Urban Economics and Public Policy	

CS 407	Economics and Computation	
Total Hours		**15-16**

a *ECON 120 can satisfy the General Education requirement in either the Understanding the Individual and Society or the Understanding U.S. Society categories.*

Free Electives

Code	Title	Hours
Select 13-14 hours of Free Electives		13-14
Total Hours		**13-14**

Sample Course Schedule

Course	Title	Hours
First Year		
First Semester		
CS 111 or CS 112 or CS 113	Program Design I or Program Design I in the Context of Biological Problems or Program Design I in the Context of Law and Public Policy	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 Success Seminar for Freshmen [a]	1
	Hours	**14**
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	3
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	**17**
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	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
ECON 120	Principles of Microeconomics [a]	4
General Education Core course		3
	Hours	**16**
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
ECON 220	Microeconomics: Theory and Applications	3
ECON 400	Honors Econometrics	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		
General Education Core course		3
Free Elective		3
Free Elective		3
Free Elective		3
	Hours	**12**
	Total Hours	**120**