

DATA SCIENCE (B.S.)

3.00 overall GPA required.

Students in the Data Science major must also successfully complete the following courses with a C- or higher by the end of their second semester in the major: CSIT 104, CSIT 114, and MATH 111 or MATH 122.

Please note: The above majors have a retention policy. Students must maintain a minimum 2.60 cumulative GPA during their first three semesters.

120 credits of coursework is required for the baccalaureate degree.

Program Requirements Overview

Code	Title	Credits
General Education Requirements		23-27
World Languages and Cultures Requirements		3-9
Major Requirements		77-83
Free Electives		17-1
Total Credits		120

Major Requirements

Code	Title	Credits
Data Science Requirements		
CSIT 104	Python Programming I	3
CSIT 114	Python Programming II	3
CSIT 213	Data Structures and Algorithms in Python	3
CSIT 230	Computer Systems	3
CSIT 275	Introduction to R Programming	3
CSIT 355	Database Systems	3
CSIT 356	Introduction to Data Science	3
CSIT 359	Data Visualization	3
CSIT 440	Principles of Data Mining	3
CSIT 455	Machine Learning	3
CSIT 456	Advanced Techniques in Data Science	3
CSIT 491	Cooperative Education in Computer Science and Information Technology	3
or CSIT 497	Undergraduate Research I	
Complete 6 credits of CSIT courses at the 300-400 level.		6
Mathematics Requirements		
CSIT 170	Discrete Mathematics	3
AMAT 120	Applied Calculus A	4
or MATH 122	Calculus I	
AMAT 220	Applied Calculus B	4
or MATH 221	Calculus II	
AMAT 345	Applied Probability	3
or MATH 340	Probability	
STAT 230	Data Science and Statistics	3
Required Minor		
Complete a required minor (See list below).		18-24
Total Credits		77-83

Required Minor

Biology (http://catalog.montclair.edu/programs/biology-minor/)
Business Analytics (http://catalog.montclair.edu/programs/business-analytics-minor/)
Business (http://catalog.montclair.edu/programs/business-minor/)
Chemistry (http://catalog.montclair.edu/programs/chemistry-minor/)
Cognitive Science (http://catalog.montclair.edu/programs/cognitive-science-minor/)
Earth and Environmental Science (http://catalog.montclair.edu/programs/earth-and-environmental-sci-minor/)
Economics (http://catalog.montclair.edu/programs/economics-minor/)
Geographic Information Science (http://catalog.montclair.edu/programs/geographic-information-science-minor/)
Journalism (http://catalog.montclair.edu/programs/journalism-minor/)
Linguistics (http://catalog.montclair.edu/programs/linguistics-minor/)
Mathematics (http://catalog.montclair.edu/programs/mathematics-minor/)
Physics (http://catalog.montclair.edu/programs/physics-minor/)
Psychology (http://catalog.montclair.edu/programs/psychology-minor/)
Public Health (http://catalog.montclair.edu/programs/public-health-minor/)

General Education Requirements

Click here for a list of courses that fulfill General Education categories. (<http://catalog.montclair.edu/programs/general-education-requirements-ba-bs/>)

Code	Title	Credits
A.	New Student Seminar	1
C.	Communication	
	1. Writing	3
	2. Literature	3
	3. Communication	3
D.	Fine and Performing Arts	3
F.	Humanities	
	Choose one course from F1. Great Works and Their Influences or F2. Philosophical and Religious Perspectives.	3
G.	Computer Science	
	Fulfilled by CSIT 104 in the major.	0
H.	Mathematics	
	Fulfilled in the major.	0
I.	Natural Science Laboratory	
	May be fulfilled by a minor course.	0-4
J.	Physical Education	1
K.	Social Science	
	1. Choose one course from K1. American and European History or K3. Social Science Perspectives.	3

2. <i>Global Cultural Perspectives</i>	3
Total Credits	23-27

World Languages and Cultures Requirements

Click here for a list of courses that fulfill World Languages and Cultures categories. (<http://catalog.montclair.edu/programs/world-languages-and-cultures-requirements/>)

Code	Title	Credits
World Languages		
Based on language placement exam, complete one or two sequential courses in the same language. Requirement is automatically fulfilled by language major courses.		
World Cultures		
Requirement may be fulfilled by course selected in General Education 0-3 - Social Science: Global Cultural Perspectives. Requirement may also be fulfilled by major coursework. See list of courses.		
Total Credits		3-9

Recommended Roadmap to Degree Completion

This recommended four-year plan is provided as an outline for students to follow in order to complete their degree requirements within four years. This plan is a recommendation and students should only use it in consultation with their academic advisor.

First Year

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (A) New Student Seminar	1	GENERAL EDUCATION: (C2) Literature	3
GENERAL EDUCATION: (C1) Writing	3	World Language 2	3
World Language 1	3	CSIT 114	3
CSIT 104	3	CSIT 170	3
MATH 122 or AMAT 120	4	MATH 221 or AMAT 220	4
	14		16

Second Year

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (C3) Communication	3	GENERAL EDUCATION: (K2) Social Science – Global Cultural Perspectives or World Cultures	3
GENERAL EDUCATION: (K1) Social Science – American and European History or (K3) Social Science – Social Science Perspectives	3	CSIT 230	3
CSIT 213	3	CSIT 359	3
MATH 340 or AMAT 345	3	STAT 330	4
Minor Course	3	Minor Course	3
	15		16

Third Year

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (F1) Humanities – Great Works and Their Influences or (F2) Humanities – Philosophical and Religious Perspectives	3	GENERAL EDUCATION: (I) Natural Science Laboratory or Free Elective	4
CSIT 275	3	CSIT 356	3
CSIT 355	3	CSIT 440	3
Minor Course	3	Minor Course	3
Minor Course	3	Minor Course	3
	15		16

Fourth Year

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (D) Fine and Performing Arts	3	GENERAL EDUCATION: (J) Physical Education	1
CSIT 456	3	CSIT 455	3
CSIT Elective	3	CSIT 491 or 497	3
CSIT Elective	3	Minor Course or Free Elective	3
Minor Course or Free Elective	3	Minor Course or Free Elective	1-3
		Free Elective	2
	15		13-15

Total Credits 120-122