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.

Degree Requirements Overview

Code	Title	Credits
New Student Seminar		1
SEEDS General Education Requirements		27-30
Major Requirements		77-83
Free Electives		15-6
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 256	Introduction to Data Science	3
CSIT 275	Introduction to R Programming	3
CSIT 355	Database Systems	3
CSIT 359	Data Visualization	3
CSIT 360	Advanced Techniques in Data Science	3
CSIT 440	Principles of Data Mining	3
CSIT 455	Machine Learning	3
CSIT 491	Internship Education in Computing 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/)

New Student Seminar

Code	Title	Credits
Students in the Adult Learner program must take GNED 100.		
Complete one course from the following. Some courses may be restricted by major. Consult with an academic advisor.		1
ADVS 198	Pathways to Success	
CHEM 190	Freshman Seminar in Chemistry	
FYS 100	First Year Seminar	
GNED 100	Adult Academic Success Seminar	
GNED 199	New Student Seminar	
HPEM 199	Freshman Seminar in Health and Physical Education	
IDS 155	Pathways to Adult Learning	
JUST 199	New Student Seminar	
MATH 102	New Student Experience for Mathematical Sciences	
MUGN 199	Freshman Seminar for Music Majors	
NURS 199	Introduction to Nursing	
POLS 199	Freshman Seminar in Political Science and Law	

SEEDS General Education Requirements

Click here for a list of courses that fulfill the SEEDS requirements. (http://catalog.montclair.edu/programs/seeds-general-education-requirements/)

Code	Title	Credits
Foundations		
Effective Writing I		
Complete one Effective Writing I course.		3
Effective Writing II		
Complete one Effective Writing II course.		3
Interactive Communication		
Complete one Interactive Communication course.		3
Quantitative Reasoning		
Fulfilled by CSIT 170 in the major.		
Political and Civic Life		
Complete one Political and Civic Life course.		3
World Language		
Complete two sequential classes in one World Language when starting at the Beginner I or Beginner II level. Complete one class when starting at the Intermediate/Advanced Level.		3-6
Exploration		
Complete one course from four different Exploration categories.		9
Analyzing Cultures and Societies		
Creative Expression		
Ethical Inquiry		
Historical Thinking		
Literary and Artistic Analysis		
Scientific Reasoning		
Fulfilled by CSIT 104 in the major.		
Total Credits		**24-27**

Recommended Roadmap to Degree Completion

This recommended degree plan is provided as an outline for students to follow in order to complete their degree requirements within four years and 120 credits. This plan is a recommendation and MUST be used in consultation with their academic advisor. Important note: Students should be aware this plan assumes no pre-requisite coursework is required. If pre-requisite coursework is needed, students may have additional requirements to fulfill which do not appear on the plan.

First Year

Fall	Credits	Spring	Credits
New Student Seminar	1	SEEDS: Effective Writing II	3
SEEDS: Effective Writing I	3	CSIT 114	3
SEEDS: World Language I	3	SEEDS: World Language II	3
CSIT 104 (Fulfills SEEDS Exploration 1: Scientific Reasoning)	3	AMAT 220	4
AMAT 120	4	SEEDS: Interactive Communication	3
	14		**16**

Second Year

Fall	Credits	Spring	Credits
SEEDS: Political and Civic Life	3	SEEDS Exploration 3	3
AMAT 345	3	STAT 230	3
CSIT 213	3	CSIT 230	3
CSIT 170 (Fulfills SEEDS: Quantitative Reasoning)	3	CSIT 256	3
SEEDS Exploration 1: Ethical Inquiry	3	SEEDS Exploration 4	3
	15		**15**

Third Year

Fall	Credits	Spring	Credits
CSIT 275	3	CSIT 360	3
CSIT 355	3	CSIT 440	3
CSIT 359	3	Minor Course 3	3
Minor Course 1	3	Minor Course 4	3
Minor Course 2	3	Minor Course 5	3
	15		**15**

Fourth Year

Fall	Credits	Spring	Credits
CSIT 455	3	CSIT 491 or 497	3
Major Elective	3	Minor Elective 8	3
Minor Elective 6	3	Major Elective	3
Minor Elective 7	3	Free Elective	3
Free Elective	3	Free Elective	3
	15		**15**

Total Credits 120