

INFORMATION TECHNOLOGY (B.S.) (COMBINED B.S./M.S. DATA SCIENCE)

A Combined Degree program enables undergraduate students to enroll in graduate courses in their senior year, which can be counted towards the completion of both their Bachelor's and Master's degree requirements.

The ability to take these "swing courses" allows students to earn both their Bachelor's and Master's degrees in a shortened period of time, typically within five years. Undergraduate students interested in this option can find more information regarding program requirements on the University's Combined Programs website (<https://www.montclair.edu/combined-programs/programs-of-study/>).

Program Requirements Overview

Code	Title	Credits
	General Education	36
	World Languages and Cultures	3-9
	Major Requirements	57
	Graduate Swing Courses	9
	Free Electives	15-9
	Total Credits	120

Major Requirements

Requirements for the graduate portion of this combined program can be found here. (<http://catalog.montclair.edu/programs/data-science-ms/>)

Code	Title	Credits
Core Courses		
CSIT 104	Python Programming I	3
CSIT 111	Fundamentals of Java Programming	3
CSIT 112	Fundamentals of Programming II	3
CSIT 212	Data Structures and Algorithms	3
CSIT 230	Computer Systems	3
CSIT 231	Systems Programming	3
CSIT 314	Software Development	3
CSIT 317	System Analysis and Design	3
CSIT 335	Introduction to Human-Computer Interaction (HCI)	3
CSIT 337	Internet Computing	3
CSIT 340	Computer Networks	3
CSIT 416	IT Project Management	3
CSIT 432	Systems Administration	3
CSIT 451	Mobile Computing	3
CSIT 460	Computer Security	3
	Complete for 3 credits:	3
CSIT 491	Cooperative Education in Computer Science and Information Technology	
Electives		
	Complete one course from the list below.	3
Required Math Courses		
AMAT 120	Applied Calculus A	4
	or MATH 122 Calculus I	
CSIT 170	Discrete Mathematics	3

STAT 230	Data Science and Statistics	3
Total Credits		61

Electives

Code	Title	Credits
CSIT 357	Artificial Intelligence	3
CSIT 359	Data Visualization	3
CSIT 360	Advanced Techniques in Data Science	3
CSIT 365	Information Assurance and Security	3
CSIT 379	Computer Science Theory	3
CSIT 429	Parallel and Distributed Computing	3
CSIT 431	Introduction to Robotics	3
CSIT 437	Web Services	3
CSIT 440	Principles of Data Mining	3
CSIT 451	Mobile Computing	3
CSIT 495	Special Topics in Undergraduate Computer Science	1-3
CSIT 497	Undergraduate Research I	1-3
CSIT 498	Undergraduate Research II	3

Graduate Swing Courses

A combined degree program allows students to complete 6-12 graduate credits ("graduate swing courses") while enrolled as an undergraduate. These courses count for both their bachelor and master's degrees. Graduate swing courses will count toward undergraduate free electives, unless noted otherwise.

The Graduate Swing Courses for this program:

Code	Title	Credits
CSIT 528	Statistics for Data Science	3
CSIT 555	Database Systems	3
CSIT 558	Data Mining	3
Total Credits		9

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		
	Complete a 1 credit New Student Seminar course.	1
C. Communication		
	1. Writing	3
	2. Literature	3
	3. Communication	3
D. Fine and Performing Arts		
	Complete a 3 credit Fine and Performing Arts course.	3
F. Humanities		
	1. <i>Great Works and Their Influences</i>	3
	2. Philosophical and Religious Perspectives	3
G. Computer Science		
CSIT 111	Fundamentals of Java Programming (Fulfilled in the major.)	

H. Mathematics	
Fulfilled in the major.	
I. Natural Science Laboratory	
Complete a 4 credit Natural Science Laboratory course.	4
J. Physical Education	
Complete a 1 credit Physical Education course.	1
K. Social Science	
1. <i>American and European History</i>	3
2. <i>Global Cultural Perspectives</i>	3
3. <i>Social Science Perspectives</i>	3
L. Interdisciplinary Studies	
Complete a 3 credit Interdisciplinary Studies course.	3
Total Credits	36

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 - 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(s)

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

Fifth year courses are taken at the graduate level, after matriculation into the graduate portion of this combined degree program.

First Year			
Fall	Credits	Spring	Credits
GENERAL EDUCATION: (A) New Student Seminar	1	GENERAL EDUCATION: (C2) Literature	3
GENERAL EDUCATION: (C1) Writing	3	GENERAL EDUCATION: (F1) Humanities – Great Works and Their Influences	3
World Language 1	3	World Language 2	3
CSIT 104	3	CSIT 111	3
GENERAL EDUCATION: (D) Fine and Performing Arts	3	Free Elective	3
	13		15

Second Year			
Fall	Credits	Spring	Credits
GENERAL EDUCATION: (C3) Communication	3	GENERAL EDUCATION: (F2) Humanities – Philosophical and Religious Perspectives	3
GENERAL EDUCATION: (K3) Social Science – Social Science Perspectives	3	GENERAL EDUCATION: (K2) Social Science – Global Cultural Perspectives	3
GENERAL EDUCATION: (L) Interdisciplinary Studies	3	CSIT 212	3
CSIT 112	3	CSIT 230	3
CSIT 170	3	CSIT 231	3
	15		15

Third Year			
Fall	Credits	Spring	Credits
CSIT 335	3	GENERAL EDUCATION: (I) Natural Science Laboratory	4
CSIT 340	3	World Cultures	3
STAT 230	3	CSIT 314	3
CSIT 317	3	CSIT 337	3
CSIT 451	3	CSIT 432	3
	15		16

Fourth Year			
Fall	Credits	Spring	Credits
CSIT 460	3	GENERAL EDUCATION: (J) Physical Education	1
CSIT 555	3	GENERAL EDUCATION: (K1) Social Science – American and European History	3
CSIT 558	3	CSIT 416	3
Major Elective	3	CSIT 491	3
Free Elective	3	CSIT 528	3
		Free Elective	3
	15		16

Total Credits 120

Fifth Year			
Fall	Credits	Spring	Credits
CSIT 571	3	CSIT 553	3
CSIT 598	3	CSIT 697 or 698	3
CSIT 696	3	Graduate Elective	3
Graduate Elective	3		
	12		9

Total Credits 21