COMPUTER SCIENCE (B.S.)

3.00 overall GPA required.

Students in the Computer Science or Information Technology majors 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 111, and MATH 111 or MATH 122 or AMAT 120.

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		24-27
Major Requirements		74
Free Electives		21-18
Total Credits		**120**

Major Requirements

Code	Title	Credits
Collateral Courses		
Select one of the following sequences:		8
PHYS 191 & PHYS 192	University Physics I and University Physics II	
CHEM 120 & CHEM 121	General Chemistry I and General Chemistry II	
BIOL 112 & BIOL 113	Principles of Biology: Introduction to the Cell and Principles of Biology: Organisms and Diversity	
Required Mathematics Courses		
AMAT 120	Applied Calculus A	4
AMAT 220	Applied Calculus B	4
AMAT 240	Introduction to Linear Algebra	4
CSIT 170	Discrete Mathematics	3
STAT 230	Data Science and Statistics	3
Required Computer Science Courses - Core		
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 379	Computer Science Theory	3
CSIT 315	Principles of Software Design	3
CSIT 415	Software Reliability, Verification and Validation	3
CSIT 460	Computer Security	3
Required Computer Science Advanced Courses		
CSIT 313	Fundamentals of Programming Languages	3
CSIT 340	Computer Networks	3
CSIT 345	Operating Systems	3
CSIT 355	Database Systems	3
Computer Science Electives		
Complete any two CSIT courses at the 300 or 400 level (except CSIT 416 or 432). See the list below.		6
Total Credits		**74**

Major Electives

Code	Title	Credits
CSIT 317	System Analysis and Design	3
CSIT 321	Introduction to Numerical Computing	3
CSIT 335	Introduction to Human-Computer Interaction (HCI)	3
CSIT 337	Internet Computing	3
CSIT 357	Artificial Intelligence	3
CSIT 359	Data Visualization	3
CSIT 360	Advanced Techniques in Data Science	3
CSIT 365	Artificial Intelligence (AI) for Cybersecurity	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 491	Internship Education in Computing Technology	3-8
CSIT 495	Special Topics in Undergraduate Computer Science	1-3
CSIT 497	Undergraduate Research I	1-3
CSIT 498	Undergraduate Research II	3

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 111	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
CSIT 112	3	CSIT 212	3
CSIT 170 (Fulfills SEEDS: Quantitative Reasoning)	3	CSIT 230	3
Collateral Sequence course	4	AMAT 240	4
SEEDS Exploration 2 (Recommend Ethical Inquiry)	3	SEEDS Exploration 4	3
	16		**16**

Third Year

Fall	Credits	Spring	Credits
CSIT 231	3	CSIT 379	3
CSIT 313	3	CSIT 460	3
CSIT 340	3	STAT 230	3
CSIT 345	3	Major Elective	3
CSIT 355	3	Free Elective	3
	15		**15**

Fourth Year

Fall	Credits	Spring	Credits
CSIT 315	3	CSIT 415	3
Major Elective	3	Free Elective	3
Free Elective	3	Free Elective	3
Free Elective	3	Free Elective	3
Free Elective	3	Free Elective	1
	15		**13**

Total Credits 120