MATHEMATICS (B.S.)

Unless otherwise noted, 120 credits of coursework is required for a baccalaureate degree with a minimum 2.0 overall GPA, and a minimum 2.0 major GPA.

Degree Requirements Overview

Code	Title	Credits
	New Student Seminar	1
	SEEDS General Education Requirements	31-33
	Major Requirements	55
	Free Electives	33-31
Total Credits		**120**

Major Requirements

Code	Title	Credits
Core Requirements		
MATH 122	Calculus I	4
MATH 221	Calculus II	4
MATH 222	Calculus III	4
MATH 225	Linear Algebra	4
MATH 340	Probability	3
Specialization Requirements		
MATH 320	Transitions to Advanced Mathematics	3
MATH 425	Advanced Calculus I	3
MATH 431	Foundations of Modern Algebra	3
Collateral Requirement		
CSIT 111	Fundamentals of Java Programming	3
or CSIT 104	Python Programming I	
PHYS 191	University Physics I	4
PHYS 192	University Physics II	4
Electives		
	Select 15 credits from the list below.	15
Capstone		
MATH 499	Math Senior Workshop	1
Total Credits		**55**

Mathematics Electives

Code	Title	Credits
COED 401	Cooperative Education Experience I	3-8
ECON 408	Strategic Thinking and Game Theory	3
MATH 323	Complex Variables	3
MATH 325	Ordinary Differential Equation	4
MATH 364	Operations Research I	3
MATH 365	Mathematics and Music	3
MATH 369	Mathematical Modeling	3
MATH 398	Vector Calculus	3
MATH 421	Partial Differential Equations	3
MATH 426	Advanced Calculus II	3
MATH 433	Theory of Numbers	3
MATH 450	Foundations of Geometry	3
MATH 451	Topology	3
MATH 460	Introduction to Applied Mathematics	3
MATH 463	Numerical Analysis	3
MATH 465	Operations Research II	3
MATH 478	Theoretical Fluid Dynamics	3
MATH 485	Applied Combinatorics and Graph Theory	3
MATH 487	Introduction to Mathematical Cryptography	3
MATH 490	Honors Seminar	3
MATH 491	Research in Mathematics Education	3
MATH 495	Special Topics in Advanced Undergraduate Mathematics	1-3
MATH 497	Mathematics Research I	1-3
MATH 498	Mathematics Research II	1-3
PHYS 368	Fluid Mechanics	3
SOCI 301	Sociological Research Methods I	4
STAT 230	Data Science and Statistics	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 listing 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		
Complete one Quantitative Reasoning course.		3
Political and Civic Life		
Complete one Political and Civic Life course.		3

World Languages	
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.	12
Analyzing Cultures and Societies	
Creative Expression	
Ethical Inquiry	
Historical Thinking	
Literary and Artistic Analysis	
Scientific Reasoning	
Total Credits	**30-33**

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
MATH 102 (Fulfills New Student Seminar)	1	MATH 221	4
SEEDS: Effective Writing I	3	SEEDS: Effective Writing II	3
MATH 122 (Fulfills SEEDS: Quantitative Reasoning)	4	PHYS 192	4
PHYS 191 (Fulfills SEEDS: Exploration 1 - Scientific Reasoning)	4	SEEDS: Interactive Communication	3
CSIT 111 or 104	3		
	15		**14**

Second Year

Fall	Credits	Spring	Credits
MATH 222	4	MATH 320	3
MATH 225	4	MATH 340	3
SEEDS: Exploration 2	3	Free Elective	3
Free Elective	3	Free Elective	3
SEEDS: World Language 1	3	SEEDS: World Language 2 or Free Elective	3
	17		**15**

Third Year

Fall	Credits	Spring	Credits
SEEDS: Exploration 3	3	SEEDS: Exploration 4	3
Major Elective	3	Major Elective	3
Free Elective	3	MATH 431	3
Free Elective	3	Free Elective	3
Free Elective	3	Free Elective	3
	15		**15**

Fourth Year

Fall	Credits	Spring	Credits
Major Elective	3	Major Elective	3
MATH 499	1	Major Elective	3
MATH 425	3	Free Elective	3
Free Elective	3	Free Elective	3
Free Elective	4	Free Elective	3
	14		**15**

Total Credits 120