MATHEMATICS (B.S.) (COMBINED B.S./M.A.T. TEACHING WITH TEACHER CERTIFICATION IN MATHEMATICS (PRESCHOOL-GRADE 12) AND TEACHER OF STUDENTS WITH DISABILITIES)

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/).

The Combined Degree with Dual Certification program is a 5-year program that leads to teacher certification in Mathematics (grades P-12), teacher certification in Teacher of Students with Disabilities, a baccalaureate degree and a master's degree. Interested students must apply to and be admitted to the Teacher Education Program as an undergraduate. Students must successfully complete the undergraduate portion of the program in order to be admitted to the Graduate School and complete the one-year master's portion of the program.

Please visit the Teacher Education Program website (https://www.montclair.edu/center-of-pedagogy/) for the required undergraduate professional sequence of courses, overall course outline, and other important Program requirements, guidelines, and procedures. Students also are strongly advised to review the Teacher Education Program Handbook.

120 credits of coursework is required for the baccalaureate degree with a minimum 3.0 overall GPA. Major GPA requirements differ depending on field of study. Consult the Teacher Education Program Handbook for more information.

Teacher Education Sequence

To be eligible for admission to the Teacher Education Program, a student must have a minimum 2.75 GPA in math major and collateral courses and have successfully completed 11 credits or more of math major courses. In addition, in order to remain in the Teacher Education Program students must maintain a 3.0 overall GPA and 2.75 GPA in the major.

Program Requirements Overview

Code	Title	Credits
General Education Requirements		26
World Languages and Cultures Requirements		3-6
Major Requirements		51
Teacher Education Program Requirements (including Graduate Swing courses)		36
Free Electives		4-1
Total Credits		**120**

Major Requirements

Requirements for the graduate portion of this combined program can be found here. (http://catalog.montclair.edu/programs/teaching-certification-p12-students-disabilities-combined-bx-mat/)

Code	Title	Credits
Required Mathematics Courses		
MATH 122	Calculus I	4
MATH 221	Calculus II	4
MATH 222	Calculus III	4
MATH 225	Linear Algebra	4
MATH 340	Probability	3
Mathematics Specialization		
MATH 271	Special Topics in Modern Mathematics	3
MATH 320	Transitions to Advanced Mathematics	3
MATH 350	College Geometry	3
MATH 370	Mathematics for Teaching	3
MATH 375	History of Mathematics	3
MATH 431	Foundations of Modern Algebra	3
STAT 330	Fundamentals of Modern Statistics I	4
Mathematics Teacher Education Electives		
Select a minimum 3 credits from the list (see below)		3
Mathematics Collateral Requirement		
CSIT 111	Fundamentals of Java Programming	3
PHYS 191	University Physics I	4
Total Credits		**51**

Mathematics Teacher Education Electives

Code	Title	Credits
AMAT 262	Mathematics of Finance I	3
MATH 323	Complex Variables	3
MATH 325	Ordinary Differential Equation	4
AMAT 362	Mathematics of Finance II	3
MATH 364	Operations Research I	3
MATH 369	Mathematical Modeling	3
MATH 398	Vector Calculus	3
MATH 421	Partial Differential Equations	3
MATH 425	Advanced Calculus I	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 485	Applied Combinatorics and Graph Theory	3
MATH 487	Introduction to Mathematical Cryptography	3
MATH 490	Honors Seminar	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
STAT 341	Statistical Computing	3
STAT 442	Fundamentals of Modern Statistics II	3
STAT 443	Theory of Statistics	3
STAT 481	Introduction to Statistical Data Mining	3
STAT 487	Statistical Genomics	3
STAT 495	Special Topics in Statistical Science	3
STAT 497	Statistical Science Research I	1-3

Teacher Education Program Requirements

Teacher Education Program Requirements for Combined Degree Programs with Subject Area P-12 and Teacher of Students with Disabilities Certifications (http://catalog.montclair.edu/programs/combined-bx-mat-teacher-education-program-requirements-p12-tsd/)

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. Great Works and Their Influences		3
2. Philosophical and Religious Perspectives		3
G. Computer Science		
CSIT 111	Fundamentals of Java Programming (Fulfilled in the major.)	
or CSIT 104	Python Programming I	
H. Mathematics		
MATH 122	Calculus I (Fulfilled in the major.)	
I. Natural Science Laboratory		
PHYS 191	University Physics I (Fulfilled in the major.)	
J. Physical Education		
Complete a 1 credit Physical Education course.		1
K. Social Science		
1. American and European History		3
2. Global Cultural Perspectives		3
3. Social Science Perspectives		
EDFD 200	Psychological Foundations of Education (Fulfilled in the Teacher Education Program.)	
L. Interdisciplinary Studies		

| SASE 210 | Public Purposes of Education: Democracy and Schooling (Fulfilled in the Teacher Education Program.) | |
| **Total Credits** | | **26** |

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 placement exam complete one or two sequential courses in one language.		3-6
World Cultures		
May be fulfilled by either the K1 or K2 General Education category.		
Total Credits		**3-6**

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: (C3) Communication	3
CSIT 111	3	World Language 1	3
MATH 122	4	MATH 221	4
PHYS 191	4	MATH 271	3
	15		**16**

Second Year

Fall	Credits	Spring	Credits
General Education requirement	3	GENERAL EDUCATION: (J) Physical Education	1
General Education requirement	3	General Education requirement	3
MATH 222	4	EDFD 200	3
MATH 320	3	MATH 225	4
SASE 210	3	MATH 340	3
		Free Elective	1
	16		**15**

Third Year

Fall	Credits	Spring	Credits
General Education requirement	3	General Education requirement	3
MATH 350	3	MATH 375	3

	Credits		Credits
SASE 320	3	SASE 322	3
SASE 321	3	SPED 469	3
SPED 279	3	STAT 330	4
	15		**16**

Fourth Year

Fall	Credits	Spring	Credits
General Education requirement or Free Elective	3	MATH 370	3
MATH 431	3	SPED 566	3
MATH Elective course	3	SPED 586	3
SPED 483	3	SPED 690	3
SPED 488	3		
	15		**12**

Total Credits 120

Fifth Year

Fall	Credits	Spring	Credits
MATH 519	3	SASE 543	3
SASE 526	3	SASE 529	6
SASE 527	3		
SPED 584	3		
	12		**9**

Total Credits 21