

MATHEMATICS MAJOR (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 of intensive study. 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-mathematics-preschool-grade-12-students-disabilities-combined-bs-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 Programming I	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 for Combined Degree Programs with P-12 Subject Area and Teacher of Students with Disabilities Certification

Code	Title	Credits
Teacher Education Prerequisites		
EDFD 200	Psychological Foundations of Education	3
or PSYC 200	Educational Psychology	
or FSHD 216	Adolescent Development	
SASE 210	Public Purposes of Education: Democracy and Schooling	3
Undergraduate Professional Sequence I		
SASE 320	Curriculum Design for Inclusive Classrooms	3
SASE 321	Assessment Practices for Inclusive Classrooms	3
SPED 279	Foundation and Philosophy of Inclusive Education	3
Undergraduate Professional Sequence II		
SASE 322	Language and Learning in Content Area Teaching	3
SPED 469	Inclusive Methods for Middle and Secondary Schools	3
Undergraduate Professional Sequence III		
SPED 483	Advanced Inclusive Methods for Middle and Secondary Schools	3
SPED 488	Promoting Prosocial Behaviors in Inclusive Settings	3
Graduate Sequence		
SPED 566	Creating Curricular Access for Adolescents with Disabilities ¹	3
SPED 586	Educational Planning for Adolescents with Disabilities ¹	3
SPED 690	Action Research in Inclusive Settings ¹	3
Total Credits		36

¹ Courses will also count toward graduate portion of this program.

General Education Requirements

Click here for a list of courses that fulfill General Education categories. (<http://catalog.montclair.edu/undergraduate-graduate-degree-requirements/general-ed-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 Programming I (Fulfilled in the major.)	
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/undergraduate-graduate-degree-requirements/world-languages-cultures-requirement/>)

Code	Title	Credits
World Languages		
	Based on placement exam complete one or two sequential courses in 3-6 one language.	
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.

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

Course	Title	Credits
First Year		
Fall		
GENERAL EDUCATION: (A) New Student Seminar		1
GENERAL EDUCATION: (C1) Writing		3
CSIT 111	Fundamentals of Programming I	3
MATH 122	Calculus I	4
PHYS 191	University Physics I	4
		Credits 15
Spring		
GENERAL EDUCATION: (C2) Literature		3
GENERAL EDUCATION: (C3) Communication		3
World Language 1		3
MATH 221	Calculus II	4
MATH 271	Special Topics in Modern Mathematics	3
		Credits 16
Second Year		
Fall		
General Education requirement		3
General Education requirement		3
MATH 222	Calculus III	4
MATH 320	Transitions to Advanced Mathematic:	3
SASE 210	Public Purposes of Education: Democracy and Schooling	3
		Credits 16
Spring		
GENERAL EDUCATION: (J) Physical Education		1
General Education requirement		3
EDFD 200	Psychological Foundations of Education	3
MATH 225	Linear Algebra	4
MATH 340	Probability	3
Free Elective		1
		Credits 15
Third Year		
Fall		
General Education requirement		3
MATH 350	College Geometry	3
SASE 320	Curriculum Design for Inclusive Classrooms	3

SASE 321	Assessment Practices for Inclusive Classrooms	3
SPED 279	Foundation and Philosophy of Inclusive Education	3
		Credits 15
Spring		
General Education requirement		3
MATH 375	History of Mathematics	3
SASE 322	Language and Learning in Content Area Teaching	3
SPED 469	Inclusive Methods for Middle and Secondary Schools	3
STAT 330	Fundamentals of Modern Statistics I	4
		Credits 16
Fourth Year		
Fall		
General Education requirement or Free Elective		3
MATH 431	Foundations of Modern Algebra	3
MATH Elective course		3
SPED 483	Advanced Inclusive Methods for Middle and Secondary Schools	3
SPED 488	Promoting Prosocial Behaviors in Inclusive Settings	3
		Credits 15
Spring		
MATH 370	Mathematic: for Teaching	3
SPED 566	Creating Curricular Access for Adolescents with Disabilities	3
SPED 586	Educational Planning for Adolescents with Disabilities	3

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SPED 690	Action Research in Inclusive Settings	3
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	Credits	12
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	Total Credits	120
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Course	Title	Credits
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Fifth Year

Fall

MATH 519	Teaching Mathematics	3
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SASE 526	Seminar in Inclusive Pedagogies	3
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SASE 527	Clinical Practice I	3
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SPED 584	Assessment in Special Education and Classroom Practice	3
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	Credits	12
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Spring

SASE 543	Advanced Seminar in Inclusive Pedagogies	3
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SASE 529	Clinical Practice II	6
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	Credits	9
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	Total Credits	21
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