

# MATHEMATICS (B.S.) (COMBINED B.S./M.A.T. TEACHING WITH TEACHER CERTIFICATION IN GRADES K-6 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 elementary education (K-6) 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 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 are also 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.

## Program Requirements Overview

Code	Title	Credits
	General Education Requirements	13
	World Languages and Cultures Requirements	3
	Major Requirements	44
	Teacher Education Program Requirements	60
<b>Total Credits</b>		<b>120</b>

## Major Requirements

Requirements for the graduate portion of this combined program can be found here (<http://catalog.montclair.edu/programs/teaching-teacher-certification-grade-k-6-students-disabilities-combined-ba-mat/>).

Code	Title	Credits
<b>Mathematics Core</b>		
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 320	Transitions to Advanced Mathematics	3
MATH 350	College Geometry	3
MATH 433	Theory of Numbers	3

MTHM 201 Mathematics in Elementary Schools I (Course credit counts in the Teacher Education sequence)

MTHM 302 Mathematics in Elementary Schools II (Course credit counts in the Teacher Education sequence)

### Mathematics Electives

Select 9 credits from the list (see below) 9

### Mathematics Collateral Requirement

CSIT 111 Fundamentals of Java Programming 3

Select one of the following: 4

ANTH 101	Physical Anthropology
BIOL 100	Biological Sciences
BIOL 110	The Biology of Human Life
CHEM 100	Introductory Chemistry
EAES 101	Planet Earth
EAES 105	Physical Geology
EAES 107	Earth and the Environment
EAES 201	Understanding Weather and Climate
EAES 240	Earth System History
EAES 250	Introduction to Marine Sciences

**Total Credits** 44

## Mathematics Electives

Complete 9 semester hours from the following:

Code	Title	Credits
AMAT 262	Mathematics of Finance I	3
MATH 271	Special Topics in Modern Mathematics	3
MATH 323	Complex Variables	3
MATH 325	Ordinary Differential Equation	4
AMAT 362	Mathematics of Finance II	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 431	Foundations of Modern Algebra	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
STAT 330	Fundamentals of Modern Statistics I	4

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 Grades K-6 and Teacher of Students with Disabilities Certification (<http://catalog.montclair.edu/programs/combined-bx-mat-teacher-education-program-requirements-k6-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
<b>A. New Student Seminar</b>		
Complete a 1 credit New Student Seminar course.		1
<b>C. Communication</b>		
1. Writing		3
2. Literature		3
3. Communication		
CMST 101	Fundamentals of Speech: Communication Requirement (Fulfilled in the Teacher Education sequence.)	
<b>F. Humanities</b>		
1. Great Works and Their Influences		3
2. Philosophical and Religious Perspectives		
EDFD 220	Philosophical Orientation to Education (Fulfilled in the Teacher Education sequence.)	
<b>G. Computer Science</b>		
CSIT 111	Fundamentals of Java Programming (Fulfilled in the major.)	
or CSIT 104	Python Programming I	
<b>H. Mathematics</b>		
MTHM 201	Mathematics in Elementary Schools I (Fulfilled in the Teacher Education sequence.)	
<b>I. Natural Science Laboratory</b>		
Fulfilled in the major.		
ANTH 101	Physical Anthropology	
or BIOL 100	Biological Sciences	
or BIOL 110	The Biology of Human Life	
or CHEM 101	Introductory Chemistry	
or EAES 101	Planet Earth	
or EAES 105	Physical Geology	
or EAES 107	Earth and the Environment	
or EAES 201	Understanding Weather and Climate	
or EAES 240	Earth System History	
or EAES 250	Introduction to Marine Sciences	
<b>K. Social Science</b>		

<b>1. American and European History</b>		
EDFD 221	Historical Foundations of American Education (Fulfilled in the Teacher Education sequence.)	
<b>2. Global Cultural Perspectives</b>		3
<b>3. Social Science Perspectives</b>		
PSYC 101	Introduction to Psychology (Fulfilled in the Teacher Education sequence.)	
<b>L. Interdisciplinary Studies</b>		
ECEL 200	Perspectives on Early Childhood and Elementary Education in a Democracy (Fulfilled in the Teacher Education sequence.)	

**Total Credits** 13

## 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
<b>World Languages</b>		
Complete one language course.		3
<b>World Cultures</b>		
Fulfilled by a General Education K2 - Global Cultural Perspectives course.		
<b>Total Credits</b>		3

## 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.

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
GENERAL EDUCATION: (A) New Student Seminar	1	GENERAL EDUCATION: (C2) Literature	3
GENERAL EDUCATION: (C1) Writing	3	GENERAL EDUCATION: (C3) Communication	3
	4		6
<b>Second Year</b>			
		<b>Spring</b>	<b>Credits</b>
		EDFD 220	3
		MTHM 201	3
			6
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ECEL 279	3	ECEL 375	3
FSHD 314	3	ECSE 305	3
MTHM 302	3	ECEL 408	3

READ 399	3	
	<b>12</b>	<b>9</b>

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ECSE 339		3 ECSE 523	3
READ 408		3 ECSE 536	3
		READ 515	3
	<b>6</b>		<b>9</b>

**Total Credits 52****Fourth Year**

<b>Summer</b>	<b>Credits</b>
ECSE 508	3
ECSE 580	3
ECEL 691	3
	<b>9</b>

**Fifth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ECEL 502		1 ECEL 504	3
ECEL 510		2 ECEL 511	6
ECEL 517		3	
ECSE 542		3	
		<b>9</b>	<b>9</b>

**Total Credits 27**