

MATHEMATICS MAJOR (B.S.)(COMBINED B.S./ M.A.T. TEACHING WITH TEACHER CERTIFICATION IN GRADES K-6 AND TEACHER OF STUDENTS WITH DISABILITIES)

The Dual Degree 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
	Total Credits	120

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
Mathematics Core		
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 Programming I	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 for Combined Degree Programs with Grades K-6 and Teacher of Students with Disabilities Certification

Code	Title	Credits
Pre-Professional Sequence		
CMST 101	Fundamentals of Speech: Communication Requirement	3
PSYC 101	Introduction to Psychology	3
FSHD 214	Child Development I	3
ECEL 200	Perspectives on Early Childhood and Elementary Education in a Democracy	3
EDFD 221	Historical Foundations of American Education	3
EDFD 220	Philosophical Orientation to Education	3
MTHM 201	Mathematics in Elementary Schools I	3
Professional Sequence		
<i>First Semester Junior Year</i>		
FSHD 314	Child Development II: Adolescence	3
MTHM 302	Mathematics in Elementary Schools II	3
READ 399	Early Literacy Development and Instruction	3
ECEL 279	Foundation and Philosophy of Inclusive Education	3
<i>Second Semester Junior Year</i>		
ECEL 375	Special Topics in Early Childhood and Elementary Education	3
ECSE 305	Development and Learning in Children With and Without Disabilities	3
ECEL 408	Social Studies and the Arts in Elementary Classrooms	3
<i>First Semester Senior Year</i>		
ECSE 339	Pedagogy in the Inclusive Elementary Classroom	3
READ 408	Literacy in the Elementary Grades	3
Undergraduate elective (Advisor approval required).		3
<i>Second Semester Senior Year</i>		
ECSE 523	Communication, Collaboration and Consultation in Inclusive Early Childhood and Elementary Contexts ¹	3
ECSE 536	Observation and Assessment of Elementary Age Children with Disabilities ¹	3
READ 515	Literacy Strategies for the Inclusive Elementary Classroom ¹	3
Total Credits		60

¹ Course will also count toward the MAT 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		
CMST 101	Fundamentals of Speech: Communication Requirement (Fulfilled in the Teacher Education sequence.)	

F. Humanities		
1. Great Works and Their Influences		3
2. Philosophical and Religious Perspectives		
EDFD 220	Philosophical Orientation to Education (Fulfilled in the Teacher Education sequence.)	

G. Computer Science		
CSIT 111	Fundamentals of Programming I (Fulfilled in the major.)	

H. Mathematics		
MTHM 201	Mathematics in Elementary Schools I (Fulfilled in the Teacher Education sequence.)	

I. Natural Science Laboratory		
Fulfilled in the major.		
ANTH 101	Physical Anthropology	
	or BIOL 100 Biological Sciences	
	or BIOL 110 The Biology of Human Life	
	or CHEM 10(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	

K. Social Science		
1. American and European History		
EDFD 221	Historical Foundations of American Education (Fulfilled in the Teacher Education sequence.)	
2. Global Cultural Perspectives		3
3. Social Science Perspectives		
PSYC 101	Introduction to Psychology (Fulfilled in the Teacher Education sequence.)	

L. Interdisciplinary Studies		
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/undergraduate-graduate-degree-requirements/world-languages-cultures-requirement/>)

Code	Title	Credits
World Languages		
Complete one language course.		3
World Cultures		

Fulfilled by a General Education K2 - Global Cultural Perspectives course.

Total Credits 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.

Course	Title	Credits
First Year		
Fall		
GENERAL EDUCATION: (A) New Student Seminar		1
GENERAL EDUCATION: (C1) Writing		3
Credits		4
Spring		
GENERAL EDUCATION: (C2) Literature		3
GENERAL EDUCATION: (C3) Communication		3
Credits		6
Second Year		
Spring		
EDFD 220	Philosophical Orientation to Education	3
MTHM 201	Mathematic: in Elementary Schools I	3
Credits		6
Third Year		
Fall		
ECEL 279	Foundation and Philosophy of Inclusive Education	3
FSHD 314	Child Development II: Adolescence	3
MTHM 302	Mathematic: in Elementary Schools II	3
READ 399	Early Literacy Development and Instruction	3
Credits		12
Spring		
ECEL 375	Special Topics in Early Childhood and Elementary Education	3

ECSE 305	Development and Learning in Children With and Without Disabilities	3
ECEL 408	Social Studies and the Arts in Elementary Classrooms	3
Credits		9

Fourth Year		
Fall		
ECSE 339	Pedagogy in the Inclusive Elementary Classroom	3
READ 408	Literacy in the Elementary Grades	3
Credits		6

Spring		
ECSE 523	Communication and Consultation in Inclusive Early Childhood and Elementary Contexts	3
ECSE 536	Observation and Assessment of Elementary Age Children with Disabilities	3
READ 515	Literacy Strategies for the Inclusive Elementary Classroom	3
Credits		9

Total Credits 52

Course	Title	Credits
Fourth Year		
Summer		
ECSE 508	Strengthening Partnerships with Families of Children with Disabilities	3

ECSE 580	Conceptual Foundations of Autism Spectrum Disorders: Bio-Psych-Social Perspectives	3
ECEL 691	Issues, Policies and Trends in Inclusive Education	3
Credits		9
Fifth Year		
Fall		
ECEL 502	Seminar I: Inclusive Early Childhood and Elementary Classrooms	1
ECEL 510	Clinical Practice I: Inclusive Early Childhood and Elementary	2
ECEL 517	Integrating Science and Technology in Early Childhood and Elementary Classrooms	3
ECSE 542	Inclusive Pedagogies for Students with Complex Learning and Behavioral Needs	3
Credits		9
Spring		
ECEL 504	Seminar II: Inclusive Early Childhood and Elementary Classrooms	3
ECEL 511	Clinical Practice II: Inclusive Early Childhood and Elementary Classrooms	6
Credits		9
Total		27
Credits		