**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 for more information.

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**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<td>World Languages and Cultures Requirements</td>
<td>3-6</td>
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<td></td>
<td>Major Requirements</td>
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**Teacher Education Program Requirements (including Graduate Swing courses)**

<table>
<thead>
<tr>
<th>Title</th>
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**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/).

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<thead>
<tr>
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<tr>
<td>MATH 122</td>
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<tr>
<td>MATH 221</td>
<td>Calculus II</td>
<td>4</td>
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<tr>
<td>MATH 222</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH 225</td>
<td>Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 340</td>
<td>Probability</td>
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**Mathematics Specialization**

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>MATH 271</td>
<td>Special Topics in Modern Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 320</td>
<td>Transitions to Advanced Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 350</td>
<td>College Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 370</td>
<td>Mathematics for Teaching</td>
<td>3</td>
</tr>
<tr>
<td>MATH 375</td>
<td>History of Mathematics</td>
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</tr>
<tr>
<td>MATH 431</td>
<td>Foundations of Modern Algebra</td>
<td>3</td>
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<tr>
<td>STAT 330</td>
<td>Fundamentals of Modern Statistics I</td>
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</table>

**Mathematics Teacher Education Electives**

Select a minimum 3 credits from the list (see below)

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>CSIT 111</td>
<td>Fundamentals of Programming I</td>
<td>3</td>
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<tr>
<td>PHYS 191</td>
<td>University Physics I</td>
<td>4</td>
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**Mathematics Teacher Education Electives**

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>AMAT 262</td>
<td>Mathematics of Finance I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 323</td>
<td>Complex Variables</td>
<td>3</td>
</tr>
<tr>
<td>MATH 325</td>
<td>Ordinary Differential Equation</td>
<td>4</td>
</tr>
<tr>
<td>AMAT 362</td>
<td>Mathematics of Finance II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 364</td>
<td>Operations Research I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 369</td>
<td>Mathematical Modeling</td>
<td>3</td>
</tr>
<tr>
<td>MATH 398</td>
<td>Vector Calculus</td>
<td>3</td>
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<tr>
<td>MATH 421</td>
<td>Partial Differential Equations</td>
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<td>MATH 425</td>
<td>Advanced Calculus I</td>
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<td>MATH 426</td>
<td>Advanced Calculus II</td>
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<tr>
<td>MATH 433</td>
<td>Theory of Numbers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 450</td>
<td>Foundations of Geometry</td>
<td>3</td>
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<td>MATH 451</td>
<td>Topology</td>
<td>3</td>
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<tr>
<td>MATH 460</td>
<td>Introduction to Applied Mathematics</td>
<td>3</td>
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<tr>
<td>MATH 463</td>
<td>Numerical Analysis</td>
<td>3</td>
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<tr>
<td>MATH 465</td>
<td>Operations Research II</td>
<td>3</td>
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<tr>
<td>MATH 485</td>
<td>Applied Combinatorics and Graph Theory</td>
<td>3</td>
</tr>
<tr>
<td>MATH 487</td>
<td>Introduction to Mathematical Cryptography</td>
<td>3</td>
</tr>
<tr>
<td>MATH 490</td>
<td>Honors Seminar</td>
<td>3</td>
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</tbody>
</table>
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)

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDFD 200</td>
<td>Psychological Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>or PSYC 200</td>
<td>Educational Psychology</td>
<td></td>
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<tr>
<td>or FSHD 216</td>
<td>Adolescent Development</td>
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<tr>
<td>SASE 210</td>
<td>Public Purposes of Education: Democracy and Schooling</td>
<td>3</td>
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Undergraduate Professional Sequence I

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SASE 320</td>
<td>Curriculum Design for Inclusive Classrooms</td>
<td>3</td>
</tr>
<tr>
<td>SASE 321</td>
<td>Assessment Practices for Inclusive Classrooms</td>
<td>3</td>
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<tr>
<td>SPED 279</td>
<td>Foundation and Philosophy of Inclusive Education</td>
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Undergraduate Professional Sequence II

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<tr>
<td>SASE 322</td>
<td>Language and Learning in Content Area Teaching</td>
<td>3</td>
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<tr>
<td>SPED 469</td>
<td>Inclusive Methods for Middle and Secondary Schools</td>
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Undergraduate Professional Sequence III

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<tbody>
<tr>
<td>SPED 483</td>
<td>Advanced Inclusive Methods for Middle and Secondary Schools</td>
<td>3</td>
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<tr>
<td>SPED 488</td>
<td>Promoting Prosocial Behaviors in Inclusive Settings</td>
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Graduate Sequence

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<tr>
<td>SPED 566</td>
<td>Creating Curricular Access for Adolescents with Disabilities ¹</td>
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<tr>
<td>SPED 586</td>
<td>Educational Planning for Adolescents with Disabilities ¹</td>
<td>3</td>
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<tr>
<td>SPED 690</td>
<td>Action Research in Inclusive Settings ¹</td>
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</table>

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/)

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.

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>SPED 690</td>
<td>Action Research in Inclusive Settings</td>
<td>3</td>
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<thead>
<tr>
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<tr>
<td>MATH 519</td>
<td>Teaching Mathematics</td>
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<tr>
<td>SASE 526</td>
<td>Seminar in Inclusive Pedagogies</td>
<td>3</td>
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<tr>
<td>SASE 527</td>
<td>Clinical Practice I</td>
<td>3</td>
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<tr>
<td>SPED 584</td>
<td>Assessment in Special Education and Classroom Practice</td>
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<tr>
<td>SASE 543</td>
<td>Advanced Seminar in Inclusive Pedagogies</td>
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<tr>
<td>SASE 529</td>
<td>Clinical Practice II</td>
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