The Dual Degree 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/cehs/academics/cop) 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.

A minimum of 120 credits of coursework is required for the baccalaureate degree with a minimum 2.0 overall GPA, and a minimum 2.0 major GPA. However, more than 120 credits may be required depending upon the major field of study.

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
Students must complete 42 credits of General Education requirements (http://catalog.montclair.edu/undergraduate-graduate-degree-requirements/general-ed-ba-bs) and 3-9 credits of World Languages and Cultures Requirements (http://catalog.montclair.edu/undergraduate-graduate-degree-requirements/world-languages-cultures-requirement).

Major Requirements
Required Mathematics Courses
MATH 122 Calculus I 4
MATH 221 Calculus II 4
MATH 222 Calculus III 4
MATH 335 Linear Algebra 4
MATH 340 Probability 3
Mathematics Specialization
MATH 320 Transitions to Advanced Mathematics 3

Math 350 College Geometry 3
MATH 370 Mathematics for Teaching 3
MATH 431 Foundations of Modern Algebra 3
MATH 475 History of Mathematics 3
STAT 330 Fundamentals of Modern Statistics I 3

Math 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
PHYS 192 University Physics II 4

Graduate Course
Select one of the following (Course will also count towards MAT portion of the program): 3
MATH 521 Real Variables I
MATH 522 Real Variables II
MATH 525 Complex Variables I
MATH 526 Complex Variables II
MATH 530 Mathematical Computing
MATH 531 Abstract Algebra I
MATH 532 Abstract Algebra II
MATH 535 Linear Algebra I
MATH 536 Linear Algebra II
MATH 540 Probability
MATH 551 Topology
MATH 554 Projective Geometry
MATH 560 Numerical Analysis
MATH 564 Ordinary Differential Equations
MATH 566 Partial Differential Equations
MATH 568 Applied Mathematics: Continuous
MATH 569 Applied Mathematics: Discrete
MATH 580 Combinatorial Mathematics
MATH 581 Graph Theory
MATH 584 Operations Research
MATH 585 Fundamentals of Scientific Computing
MATH 586 Fundamentals of Mathematical Models
MATH 587 Fundamentals of Optimization
MATH 588 Professional Science Master Mini-Projects
MATH 590 Advanced Topics
MATH 591 Applied Industrial Mathematics
STAT 541 Applied Statistics
STAT 542 Statistical Theory I
STAT 543 Statistical Theory II
STAT 544 Statistical Computing
STAT 545 Practicum in Statistics I
STAT 546 Non-Parametric Statistics
STAT 547 Design and Analysis of Experiments
STAT 548 Applied Regression Analysis
STAT 549 Sampling Techniques

Total Credits 54
### Math Teacher Education Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 323</td>
<td>Complex Variables</td>
<td>3</td>
</tr>
<tr>
<td>MATH 335</td>
<td>Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 360</td>
<td>Mathematical Modeling in Biology</td>
<td>3</td>
</tr>
<tr>
<td>MATH 368</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 398</td>
<td>Vector Calculus</td>
<td>3</td>
</tr>
<tr>
<td>MATH 420</td>
<td>Ordinary Differential Equations</td>
<td>4</td>
</tr>
<tr>
<td>MATH 421</td>
<td>Partial Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 425</td>
<td>Advanced Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 426</td>
<td>Advanced Calculus II</td>
<td>3</td>
</tr>
<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>
</tr>
<tr>
<td>MATH 451</td>
<td>Topology</td>
<td>3</td>
</tr>
<tr>
<td>MATH 460</td>
<td>Introduction to Applied Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 463</td>
<td>Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 464</td>
<td>Operations Research I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 465</td>
<td>Operations Research II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 466</td>
<td>Mathematics of Finance I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 467</td>
<td>Mathematics of Finance II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 469</td>
<td>Mathematical Modeling</td>
<td>3</td>
</tr>
<tr>
<td>MATH 471</td>
<td>Selected Topics in Modern Mathematics</td>
<td>3</td>
</tr>
<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>
</tr>
<tr>
<td>MATH 491</td>
<td>Research in Mathematics Education</td>
<td>3</td>
</tr>
<tr>
<td>MATH 495</td>
<td>Topics for Undergraduates</td>
<td>1-3</td>
</tr>
<tr>
<td>MATH 497</td>
<td>Mathematics Research I</td>
<td>1-3</td>
</tr>
<tr>
<td>MATH 498</td>
<td>Mathematics Research II</td>
<td>1-3</td>
</tr>
<tr>
<td>STAT 401</td>
<td>Applied Statistics for the Sciences</td>
<td>3</td>
</tr>
<tr>
<td>STAT 403</td>
<td>Techniques and Applications of Statistics</td>
<td>3</td>
</tr>
<tr>
<td>STAT 411</td>
<td>Statistical Computing</td>
<td>3</td>
</tr>
<tr>
<td>STAT 442</td>
<td>Fundamentals of Modern Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>STAT 443</td>
<td>Introduction to Mathematical Statistics</td>
<td>3</td>
</tr>
<tr>
<td>STAT 481</td>
<td>Introduction to Statistical Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>STAT 487</td>
<td>Statistical Genomics</td>
<td>3</td>
</tr>
<tr>
<td>STAT 495</td>
<td>Topics in Statistical Science</td>
<td>1-3</td>
</tr>
<tr>
<td>STAT 497</td>
<td>Undergraduate Research in Statistical Science</td>
<td>1-3</td>
</tr>
</tbody>
</table>

### Teacher Ed Program Requirements (P-12, Bachelor’s/MAT)

#### Teacher Ed Pre-Requisite Requirements

**Health for Teacher Education**

Select one of the following: 1

- BIOL 100  Biological Sciences
- BIOL 107  Biology for Survival
- BIOL 110  The Biology of Human Life
- BIOL 215  Human Heredity
- BIOL 240  Mammalian Anatomy and Physiology I
- BIOL 241  Mammalian Anatomy and Physiology II
- BIOL 243  Human Anatomy and Physiology
- BIOL 380  Genetics

- HLTH 101  Personal Health Issues
- HLTH 207  Injury Prevention and Emergency Care
- HLTH 208  Study of Human Diseases
- HLTH 213  Perspectives on Drugs
- HLTH 220  Mental Health
- HLTH 290  Human Sexuality
- HLTH 330  Health Education Methods
- HLTH 411  School Health and Community Services
- HLTH 430  Counseling Skills for Public Health Professionals
- HONP 210  Honors Seminar in Science
- HONP 211  Honors Seminar in Contemporary Issues in Science
- HPEM 150  Principles and Practice of Emergency Care
- NUFD 182  Nutrition

**Speech for Teacher Education**

- CMST 101  Fundamentals of Speech: Communication Requirement

**Additional Teacher Ed Pre-Requisites**

- EDFD 200  Psychological Foundations of Education or PSYC 200  Educational Psychology
- EDFD 220  Philosophical Orientation to Education
- EDFD 221  Historical Foundations of American Education

Select one of the following:

- EDFD 210  Public Purposes of Education: Democracy and Schooling
- READ 210  Public Purposes of Education: Democracy and Schooling
- SASE 210  Public Purposes of Education: Democracy and Schooling

**Undergraduate Professional Sequence I**

- SASE 305  Teaching for Equity and Diversity
- SASE 312  Educating English Language Learners
- SPED 279  Foundation and Philosophy of Inclusive Education

**Undergraduate Professional Sequence II**

- READ 411  Language Literacy
- SPED 367  Language-Based Strategies for Inclusive Classrooms

**Undergraduate Professional Sequence III**

- SPED 469  Inclusive Methods for Middle and Secondary Schools
- SPED 488  Promoting Prosocial Behaviors in Inclusive Settings

**Graduate Sequence**

- SPED 566  Creating Curricular Access for Adolescents with Disabilities
- SPED 586  Educational Planning for Adolescents with Disabilities

**Total Credits**

43-44

1 Or pass the MSU Health Knowledge Test available through the Center of Pedagogy.

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