

# BS MATHEMATICS + MAT ADOLESCENCE ED: MATHEMATICS AP

## Program Overview

AP Coordinator	Jason Huang, (845) 257-2818, <a href="mailto:huangj18@newpaltz.edu">huangj18@newpaltz.edu</a>
Mathematics Coordinator	David Hobby, (845) 257-3563, <a href="mailto:hobbyd@newpaltz.edu">hobbyd@newpaltz.edu</a>
Program ID	BS Mathematics AP (512M), MAT Adolescence Ed: Mathematics AP (107C)
Credits	122 UG +30 GR
Program Length	The Accelerated Pathway program may be completed in 10 semesters, but students must complete the graduate degree within 5 years.
Modality	In-person
Full-time/Part-time	Full-time
Transfer Credits	9-12 graduate credits taken while an undergraduate may be transferred into the MAT program.
MAT Capstone	Practicum
Certification/Licensure	NYSED Initial/Professional Adolescent Education: Mathematics

## Program Description

We have developed this program in response to popular demand from students and parents who have called for a pathway to fulfilling jobs in education and science, and to school districts who report an increasing number of full-time job openings in STEM disciplines. Graduation from the Accelerated Pathway (AP) program empowers students with options to choose the career they find most fulfilling, whether that means becoming a science teacher, working as a mathematician, or pursuing a Ph.D.

## How does it work?

Get started as an undergraduate by declaring the Mathematics AP major (512M):

- **Meet** with AP advisor, [Jason Huang](#), to declare the Mathematics AP major.
- **Work** with your AP advisor to select three or four graduate courses to take during your senior year.
- **Apply** for the MAT Adolescence Ed: Mathematics AP program in your senior year.
- **Transfer** 9-12 credits of graduate courses taken as an undergraduate into your graduate program.

## Graduate Admission Requirements

Graduate admission requires submission of:

- Graduate application - select major 107C.
- Admission essay responding to the following prompt:

- Reflect on a time when your idea or belief was questioned or challenged. Or, conversely, reflect on a time when your idea or belief was validated. What happened? In what way(s) could this time be considered a learning experience?  
*As you reflect, please include at least one reference to the [School of Education's Conceptual Framework](#) and discuss how it speaks to your experience.*
- One set of official transcripts for all undergraduate and graduate course work indicating at least a 3.0 cumulative GPA.

## Admission Deadlines

March 1	Fall Admission
October 1	Spring Admission

Accepting on a rolling basis until the program is full. However, applications must at least be started by the deadline or they will not be considered. Applying by the suggested deadlines above ensures an easier registration process. Applicants who are admitted later may find that classes that wish to enroll in are already full.

## Curriculum Requirements

### BS Mathematics AP (512M)

Graduate courses taken under advisement during the student's senior year will transfer into the MAT program upon matriculation.

Course	Title	Credits
<b>Year 1</b>		
<b>Fall</b>		
ENG170	Writing and Rhetoric	4
MAT251	Calculus I	4
Gen Ed: Foreign Language (FL)		3
Gen Ed: The Arts (AR)		3
Gen Ed: World Civilization (OW)		3
<b>Credits</b>		<b>17</b>
<b>Spring</b>		
MAT252	Calculus II	4
MAT260	Introduction to Proof	3
Gen Ed: Humanities (H)		3
Gen Ed: Foreign Lang (FL)		3-4
<b>Credits</b>		<b>13-14</b>
<b>Year 2</b>		
<b>Fall</b>		
MAT353	Calculus III	4
MAT359	Ordinary Differential Equations	3
PHY201	General Physics 1	3
PHY211	Physics 1 Laboratory	1
EDS340	Sociological and Philosophical Foundations of Education	3
<b>Credits</b>		<b>14</b>
<b>Spring</b>		
MAT362	Linear Algebra	3
MAT331	Axiomatic Geometry	3
PHY202	General Physics 2	3
PHY212	General Physics 2 Lab	1
EDS372	Developing Adolescence	3

Gen Ed: Western Civilization (WC)	3
<b>Credits</b>	<b>16</b>
<b>Year 3</b>	
<b>Fall</b>	
MAT304 Foundations of Algebra	3
MAT381 Probability and Statistics I	3
Math Elective (300-400 level)	3
Upper-division elective	3
Select FIRST course of a pairing below:	3-4
CPS210 Computer Science I (4 cr) and CPS310 Computer Science II (4 cr)	
BIO201 General Biology I (3 cr) + BIO211 General Biology I Lab (1 cr) and BIO202 General Biology II (3 cr) + BIO212 General Biology II Lab (1 cr)	
GLG201 Physical Geology (3 cr) + GLG211 Physical Geology Lab (1 cr) and GLG202 Historical Geology (4 cr)	
CHE201 General Chemistry I (3 cr) + CHE212 General Chemistry I Lab (1 cr) and CHE202 General Chemistry II (3 cr) + CHE212 General Chemistry II Lab (1 cr)	
ECO206 Principles of Microeconomics (3 cr) and ECO207 Principles of Macroeconomics (3 cr)	
<b>Credits</b>	<b>15-16</b>
<b>Spring</b>	
MAT303 Foundations of Analysis	3
MAT441 Abstract Algebra I	3
EDS383 Introduction to Literacy for Diverse Learners	3
Upper-division elective	3
Select SECOND course of the pairings below:	3-4
CPS210 Computer Science I (4 cr) and CPS310 Computer Science II (4 cr)	
BIO201 General Biology I (3cr) + BIO211 General Biology I Lab (1cr) and BIO202 General Biology II (3 cr) + BIO212 General Biology II Lab (1 cr)	
GLG201 Physical Geology (3 cr) + GLG211 Physical Geology Lab (1 cr) and GLG202 Historical Geology (4 cr)	
CHE201 General Chemistry I (3 cr) + CHE211 General Chemistry I Lab (1cr) and CHE202 General Chemistry II (3 cr) + CHE212 General Chemistry II Lab (1 cr)	
ECO206 Principles of Microeconomics (3 cr) and ECO207 Principles of Macroeconomics (3 cr)	
<b>Credits</b>	<b>15-16</b>
<b>Year 4</b>	
<b>Fall</b>	
MAT431 Real Analysis I	3
Math Elective (300-400 level)	3
Graduate Math elective (500-700 level)	3
SED540 Graduate Foundations of Adolescence Education Seminar	1
SED525 Digital Literacies and Learning in Secondary Education	1
SPE565 Teaching in Inclusive Classrooms	3
<b>Credits</b>	<b>14</b>
<b>Spring</b>	
Integrating English Language Learners in the School & Classroom	3

Upper-division electives	6
Graduate Math elective (500-700 level)	3
SED703 Curriculum: Designs for Literacy, Learning, and Assessment in Adolescence Education	3
SED551 Field Experience I	1
<b>Credits</b>	<b>16</b>
<b>Total Credits</b>	<b>120-123</b>

### MAT Adolescence Ed: Mathematics AP (107C)

Any graduate course taken as part of the BS Mathematics AP program will transfer into the MAT plan of study.

Code	Title	Credits
<b>Fall (16 Credits)</b>		
EDS539	Social Foundations of Education <sup>1</sup>	3
EDS730	Adolescent Development <sup>1</sup>	3
SED545	Mathematics in the Secondary School	3
SED552	Field Experience II <sup>Includes 35 hours of fieldwork</sup>	1
Graduate Math Elective (500-700 level)		3
Select a Diversity Course from the options below:		3
EDS537	Issues in Multicultural Education	
EDS541	Approaches to Social Justice Educational Studies	
EDS548	Politics and Ethics of Service	
EDS581	Race and Gender in Education	
<b>Spring (14 Credits)</b>		
SED604	Practicum in Secondary Ed 7-9	6
SED605	Practicum in Secondary Ed 10-12	6
SED606	Practicum Seminar	1
SED553	Field Experience III <sup>Includes 30hours of fieldwork</sup>	1
<b>Total Credits</b>		<b>30</b>

<sup>1</sup> Students who completed EDS340 and/or EDS372 may substitute graduate education courses, by advisement.

## Academic Standing Requirements for Bachelor's/Master's Students

A cumulative GPA of less than 3.0 in graduate-level courses taken in the undergraduate portion of an accelerated pathway program precludes the student's good standing. Students with a cumulative GPA between 2.75 to 2.99 are strongly advised to reconsider continuing into the graduate program. Students with a cumulative GPA below 2.75 may not continue and will be de-matriculated from GR program.

## Graduate Program Requirements

- Review graduate "plan of study" during the first semester after matriculation into the MAT portion of the program.
- Maintain a graduate cumulative grade point average of 3.0 or better with no more than two grades below B-.
- Successful completion of practicum during the final semester of study. Students are responsible for their own transportation to the field and student teaching placements and must be prepared to commute up to 45 miles, one way, to these placements.

## Required Workshops for Certification

Attending workshops designed to assist teachers in:

- Preventing violence in the schools (S.A.V.E)
- Recognizing symptoms of child abuse and neglect,
- Providing a safe and supportive learning environment through the training for Dignity for All Students Act (DASA), and
- Completing the Health & Safety training.

## Graduation Checklist

- Apply for graduation via [my.newpaltz.edu](http://my.newpaltz.edu) under "Graduation" tab according to the schedule in the [academic calendar](#).
- Resolve any pending admission conditions (outlined in your acceptance letter) and/or missing documents if applicable.
- Review your progress report via [my.newpaltz.edu](http://my.newpaltz.edu) to ensure that you have completed all program requirements.
- Remember that only two grades below a B- may be applied to your [plan of study](#)
- Contact your advisor if you need to amend your plan or process [transfer credit](#).
- Ensure that you are in [good academic standing](#) with a GPA (Grade Point Average) of 3.0 or higher.
- Pass your capstone or culminating assessment.
- Complete your degree within the [specified time limit](#) outlined in the Program Overview.

## New York State Certification Testing requirements

- Obtaining fingerprint clearance. Information packets are available in the Secondary Education department (OM 323). Applicants for certification are asked to provide information about past convictions, misconduct, etc., on the application for a certificate, and the New York State Education Department is authorized to investigate complaints regarding an applicant's past convictions or any acts which raise a reasonable question as to the individual's moral character.
- Students must receive satisfactory scores on the New York State Teacher Certification Examinations. More information on these tests may be obtained at <http://www.nystce.nesinc.com>.

Upon graduation, students will receive the Master of Arts in Teaching (MAT) degree. Students will have completed all academic requirements for both initial and professional certification and will be recommended for both certifications. Students will receive their professional certificate after they have completed three years of satisfactory secondary teaching

experience in their discipline and notification of such to the State Education Department.

For information on obtaining a teaching credential in New York State, please visit the New York State Education Department website at <http://www.highered.nysed.gov/tcert/>.

## Undergraduate Program Learning Outcomes

### BA, BS Mathematics

The set of learning objectives for the mathematics major (512), the mathematics adolescent education (446) major, and the mathematics elementary education concentration (601M) are:

- 1. Computation:** Students can reliably perform numeric and symbolic computations.
  - 2. Representation:** Students can construct and apply standard symbolic and graphical representations of mathematical objects.
  - 3. Estimation:** Students are able to estimate, approximate, and check results for reasonableness.
  - 4. Modeling:** Students can construct appropriate mathematical models for real-world problems.
  - 5. Communication:** Students are proficient at oral and written communication of mathematical content.
  - 6. Comprehension:** Students are able to read and comprehend a mathematical argument, identifying any flaws in its reasoning.
  - 7. Definitions:** Students can state and apply mathematical definitions and theorems.
  - 8. Proving:** Students are able to write formal mathematical proofs.
  - 9. Hypothesizing:** Students are able to use abstraction and generalization to make, test, and revise mathematical hypotheses.
  - 10. Novelty:** Students can apply their mathematical knowledge to a novel situation.
  - 11. Independence:** Students are proficient at thinking independently and creatively.
  - 12. Breadth:** Students are able to use techniques from a number of different fields of mathematics.
- 13. Additional Objectives for Math Adolescence Ed:**
- A) Mastery:** Students have mastered the mathematics usually taught in high school.
  - B) Technology:** Students are able to easily use new instructional technologies.
- 14. Additional Objectives for Math Elementary Ed:**
- A) Mastery:** Students have mastered the mathematics usually taught in elementary school.
  - B) Technology:** Students are able to easily use new instructional technologies.

## Graduate Program Learning Objectives

### Adolescence Education Mathematics (MAT)

Candidates who successfully complete all required components of the MAT Adolescence Math program at SUNY New Paltz will:

- **Content Knowledge:** Enhance content area through synthesizing mathematical conceptual understandings with pedagogical practice and implementation.
- **Planning:** Be able to plan lessons in math that are NCTM standards-based, are clear and organized, rely upon a variety of appropriate pedagogical practices, include appropriate technologies, and differentiate instruction that provides opportunities to promote appreciation of diversity, tolerance, and inclusion in safe, democratic, and equitable learning environments.
- **Assessment and P-12 Learning:** Be able to choose, design, and implement authentic and appropriate formative and summative assessments to evaluate student learning, consider assessment data when making instructional decisions, and identify effective or problematic teaching moments as they are occurring in order to facilitate student growth in specified content, cognitive skills, and/or social skills.
- **Pedagogical Practice:** Demonstrate the ability to maximize student learning by incorporating content with pedagogical knowledge, utilizing appropriate and effective technology, and implementing a variety of developmentally and contextually appropriate evidence-based instructional strategies to make learning meaningful and relevant for students while teaching.
- **Dispositions:** Exhibit the knowledge, skills, and dispositions necessary to practice an ethically informed and self-reflective philosophy, participate effectively in institutional change, and develop respectful relationships with students, families, communities and colleagues.
- **Critical Thinking and Reasoning:** Clearly articulate an issue or problem; identify, analyze, and evaluate ideas, data, and arguments as they engage in planning, assessing, and teaching; and acknowledge limitations such as perspective and bias as they develop well-reasoned arguments to form judgements and/or draw conclusions that support pedagogical decisions.
- **Information Literacy:** Locate appropriate resources effectively using appropriate tools; evaluate information with an awareness of authority, validity, and bias; and demonstrate an understanding of the ethical dimensions of information use, creation, and dissemination as they relate to the field of education.