

**Content Preparation Update Worksheet
Mathematics Teacher Preparation Program**

Applicant Name: _____

Date: _____

At the time of your admission into the program, you were asked to complete an “Admission Transcript Review Worksheet”, to help evaluate the extent to which your preparation in the subject matter you will be teaching fulfilled both New York State certification requirements and relevant professional organization standards and, when needed, to let you know what additional coursework and/or other experiences would need to be completed by graduation. As you are now at the end of your program, we would like you to use this “Update” worksheet to document that you have completed all the additional experiences agreed upon at the time of admissions (if any), and also to identify other learning opportunities you had throughout your program to deepen your proficiency in specific content preparation standards. This will give the reviewer a complete picture of your content preparation at completion of your teacher preparation program.

(A) Relevant Subject Matter Coursework since Admission Review

In the table below, please report the required information for ALL the relevant subject matter coursework that you have completed and/or taken since your admission review, if any (this should include courses M.A.T. students have taken in The College):

Notes	Course Number	Course Title	Credit Hours	Grade	Sem. taken	Institution where the course was taken

Current cumulative total # credit hours in math: _____

(Include in this total relevant credits taken prior to matriculation in the program, as well as those listed in the table above)

(B) Professional Organization Recommendations

In the table below, please indicate relevant experiences that occurred after your admission into the teacher preparation and contributed to your learning with respect to each of the content preparation standards identified by the National Council of Teachers of Mathematics (NCTM):

Content Standard 9: Knowledge of numbers and operation. <i>Prospective mathematics teachers should:</i>	Relevant coursework or other experiences:	Comments
9.1. Analyze and explain the mathematics that underlies the procedures used for operations involving integers, rational, real, and complex numbers.		
9.2. Use properties involving number and operations, mental computation, and computational estimation.		
9.3. Provide equivalent representations of fractions, decimals, and percents.		
9.4. Create, solve, and apply proportions.		
9.5. Apply the fundamental ideas of number theory.		
9.6. Make sense of large and small numbers and use scientific notation.		
9.7. Compare and contrast properties of numbers and use scientific notation.		
9.8. Represent, use, and apply complex numbers.		
9.9. Recognize matrices and vectors as systems that have some of the properties of the real number system.		
9.10. Demonstrate knowledge of the historical development of number and number systems including contributions from diverse cultures.		

Content Standard 10: Knowledge of different perspectives on algebra. <i>Prospective mathematics teachers should:</i>	Relevant coursework or other experiences:	Comments
10.1. Analyze patterns, relationships and functions of one and two variables.		
10.2. Apply fundamental ideas of linear algebra.		
10.3. Apply the major concepts of abstract algebra to justify algebraic operations and formally analyze algebraic structures.		
10.4. Use mathematical models to represent and understand quantitative relationships.		
10.5. Use technological tools to explore algebraic ideas and representations of information in solving problems.		
10.6. Demonstrate knowledge of the historical development of algebra including contributions from diverse cultures.		

Content Standard 11: Knowledge of geometries. <i>Prospective mathematics teachers should:</i>	Relevant coursework or other experiences:	Comments
11.1. Demonstrate knowledge of core concepts and principles of Euclidean and non-Euclidean geometries in two and three dimensions from both formal and informal perspectives.		
11.2. Exhibit knowledge of the role of axiomatic systems and proofs in geometry.		
11.3. Analyze characteristics and relationships of geometric shapes and structures.		
11.4. Build and manipulate representations of two and three dimensional objects and visualize objects from different perspectives		
11.5. Specify locations and describe spatial relationships using coordinate geometry, vectors, and other representation systems.		
11.6. Apply transformations and use symmetry, similarity and congruence to analyze mathematical situations.		
11.7. Use concrete models, drawings, and dynamic geometric software to explore geometric ideas and their applications in real-world contexts.		
11.8. Demonstrate knowledge of the historical development of Euclidean and non-Euclidean geometries including contributions from diverse cultures.		

Content Standard 12: Knowledge of calculus. <i>Prospective mathematics teachers should:</i>	Relevant coursework or other experiences:	Comments
12.1. Demonstrate a conceptual understanding of and procedural facility with basic calculus concepts.		
12.2. Apply concepts of function, geometry, and trigonometry in solving problems involving calculus.		
12.3. Use the concepts of calculus and mathematical modeling to represent and solve problems taken from real-world contexts		
12.4. Use technological tools to explore and represent fundamental concepts of calculus.		
12.5. Demonstrate knowledge of the historical development of calculus including contributions from diverse cultures.		

Content Standard 13: Knowledge of discrete mathematics. <i>Prospective mathematics teachers should:</i>	Relevant coursework or other experiences:	Comments
13.1. Demonstrate knowledge of basic elements of discrete mathematics such as graph theory, recurrence relations, finite difference approaches, linear programming, and combinatorics.		
13.2. Apply the fundamental ideas of discrete mathematics in the formulation and solution of problems arising from real-world situations.		
13.3. Use technological tools to solve problems involving the use of discrete structures and the application of algorithms.		
13.4. Demonstrate knowledge of the historical development of discrete mathematics including contributions from diverse cultures.		

Content Standard 14: Knowledge of data analysis, statistics and probability. <i>Prospective mathematics teachers should:</i>	Relevant coursework or other experiences:	Comments
14.1. Design investigations, collect data, and use a variety of ways to display data and interpret data representations that may include bivariate data, conditional probability and geometric probability.		
14.2. Use appropriate methods such as random sampling or random assignment of treatments to estimate population characteristics, test conjectured relationships among variables, and analyze data.		
14.3. Use appropriate statistical methods and technological tools to describe shape and analyze spread and center.		
14.4. Use statistical inference to draw conclusions from data.		
14.5. Identify misuses of statistics and invalid conclusions from probability.		
14.6. Draw conclusions involving uncertainty by using hands-on and computer-based simulation for estimating probabilities and gathering data to make inferences and conclusions.		
14.7. Determine and interpret confidence intervals.		
14.8. Demonstrate knowledge of the historical development of statistics and probability including contributions from diverse cultures.		

Content Standard 15: Knowledge of measurement. <i>Prospective mathematics teachers should:</i>	Relevant coursework or other experiences:	Comments
15.1. Recognize the common representations and uses of measurement and choose tools and units for measuring.		
15.2. Apply appropriate techniques, tools, and formulas to determine measurements and their application in a variety of contexts.		
15.3. Completes error analysis through determining the reliability of the numbers obtained from measures.		
15.4. Demonstrate knowledge of the historical development of measurement and measurement systems including contributions from diverse cultures.		