



**UNIVERSITY OF MARYLAND GLOBAL CAMPUS (UMGC)
DEPARTMENT OF EDUCATION**

Conceptual Framework (CF) Alignment: UMGC’s professional education unit instills in all candidates the belief that all students can learn and learn at high levels, and that they as teachers and teacher candidates are instrumental in ensuring that this learning occurs. This transcript review form is used for MAT admissions in conjunction with Key Assessments 2 – Description of transcript analysis process, which aligns with CF Learning Objective 1: Teaching for Learning – The candidate acts upon academic content, professional and pedagogical knowledge, and understanding of students to maximize student achievement. The use of this transcript review form also aligns with the Department’s Professional Dispositions category 1: Relationship with students through curriculum and instruction.

**MAT TRANSCRIPT REVIEW FORM FOR SECONDARY MATHEMATICS,
7-12 GRADE TEACHER CERTIFICATION – NCTM STANDARDS 2012**

NCTM Assessment Standards for Certification	Typical Courses Aligned with Standards (Course Samples)	Courses Completed (Include Prefix, Number, and Name)	# of Credits
Knowledge of Number and Quantity <ul style="list-style-type: none"> • Structure, properties, relationships, operations, and representations of numbers and number systems • Fundamental ideas of number theory 	<ul style="list-style-type: none"> • Differential Equations • Complex Variables 		

<ul style="list-style-type: none"> • Quantitative reasoning and relationships that include ratio, rate, and proportion and the use of units in problem situations • Vector and matrix operations, modeling, and applications • Historical development and perspectives of number, number systems, and quantity 			
<p>Knowledge of Algebra</p> <ul style="list-style-type: none"> • Algebraic notation, symbols, expressions, equations, inequalities, and proportional relationships • Function classes • Functional representations • Patterns of change in linear, quadratic, polynomial, and exponential functions and in proportional and inversely proportional relationships • Linear algebra • Historical development and perspectives of algebra including contributions of significant figures and diverse cultures 	<ul style="list-style-type: none"> • College Algebra • Linear Algebra 		
<p>Knowledge Geometry and Trigonometry</p> <ul style="list-style-type: none"> • Euclidean geometry in two and three dimensions and two-dimensional non-Euclidean geometries • Transformations • Congruence • Right triangles and trigonometry • Periodic phenomena and trigonometric identities • Two- and three-dimensional objects 	<ul style="list-style-type: none"> • Trigonometry • Analytical Geometry 		

<ul style="list-style-type: none"> • Geometric constructions, axiomatic reasoning, and proof • Analytic and coordinate geometry including algebraic proofs • Historical development and perspectives of geometry and trigonometry including contributions of significant figures and diverse cultures 			
<p>Knowledge of Statistics and Probability</p> <ul style="list-style-type: none"> • Statistical variability • Creation and implementation of surveys and investigations using sampling methods and statistical designs, statistical, justification of conclusions, and generalization of results • Univariate and bivariate data distributions for categorical data and for discrete and continuous random variables • Empirical and theoretical probability for both simple and compound events • Random (chance) phenomena, simulations, and probability distributions • Historical development and perspectives of statistics and probability including contributions of significant figures and diverse cultures • 	<ul style="list-style-type: none"> • Concept of Real Analysis • Statistics 		
<p>Knowledge of Calculus</p> <ul style="list-style-type: none"> • Limits, continuity, rates of change, the Fundamental Theorem of Calculus, • Parametric, polar, and vector functions 	<ul style="list-style-type: none"> • Calculus • Calculus II, III 		

<ul style="list-style-type: none"> Sequences and series; Multivariate functions Applications of function, geometry, and trigonometry concepts to solve problems involving calculus Historical development and perspectives of calculus including contributions of significant figures and diverse cultures 			
<p>Knowledge of Discrete Mathematics</p> <ul style="list-style-type: none"> Discrete structures Enumeration Propositional and predicate logic Applications of discrete structures such Historical development and perspectives of discrete mathematics including contributions of significant figures and diverse cultures 	<ul style="list-style-type: none"> Discrete Mathematics 		
		Total Credits:	

Note: Applicants may qualify to enter the MAT program with a content specialization in Mathematics if they have an undergraduate major in the certification area, or if they have completed 30 credit hours of coursework in Mathematics.

Secondary Mathematics, 7-12 Grade Teacher Certification

Full standards are available at NCTM: <http://www.nctm.org/Standards-and-Positions/CAEP-Standards/>