



**UNIVERSITY OF THE EAST**  
Graduate School  
Manila

<b>Master in Education (MEd)</b> Mathematics		
	<b>Core</b>	<b>Units</b>
GED 7101	Psychological Foundations of Education	3
GRR 7501	Statistical Methods Applied to Research	3
GRR 7502	Research Methods Across Disciplines	3
GED 7200	Multimedia in Education	3
		<b>12</b>
<b>Major</b>		
GTM 7101	Linear Algebra	3
GTM 7102	Coordinate Geometry	3
GTM 7103	Advanced Calculus 1	3
GTM 7104	Matrix Algebra**	3
GTM 7106	Trends in Teaching Mathematics	3
		<b>15</b>
<b>Cognate</b>		
GTM 7105	Vector and Tensor Analysis ****	3
GTM 7107	Curriculum Development	3
GTM 7108	Theory of Rings and Groups	3
GTM 7109	Advanced Calculus II ***	3
		<b>6</b>
GRR 7700	Comprehensive Examination	
GRR 7903	Action Research	3
GRR 7904	Case Writing in Education	3
		<b>6</b>
<b>Total</b>		<b>39</b>

\* The number of bridging courses may vary based on the work experience and academic background of the applicant.

\*\* Prerequisite: GTM 7101 Linear Algebra

\*\*\* Prerequisite: GTM 7103 Advanced Calculus 1

\*\*\*\* Prerequisite: GTM 714 Matrix Algebra

## CORE

### **GED 7101 Psychological Foundations of Education**

The application of psychology to education including the determinants of behavior, how students learn, the transfer and management of learning, etc. (3 units)

### **GRR 7501 Statistical Methods Applied to Research**

Fundamentals of statistics as applied to master's degree research, including population, sample, parameter, statistics, and variable; the branches of statistics, sources of data, sampling concepts, sample selection methods; analysis and interpretation of data using statistics software (3 units)

### **GRR 7502 Research Methods across Disciplines**

Methods and designs, concepts, processes, tools and interpretation of results of research in different disciplines (3 units)

### **GED 7200 Multimedia in Education**

Blended learning involving the use of online learning and relevant educational technologies to deliver teaching content. (3 units)

## MAJOR

### **GTM 7101 Linear Algebra**

Includes vector geometry, linear equation and matrices, real vector spaces, linear transformations, determinants, eigenvalues and eigenvectors. (3 units)

### **GTM 7102 Coordinate Geometry**

Concepts of plane analytic geometry including locus derivation and the straight line, conics, curve sketching, transcendental curves, polar coordinates, polar equations, empirical equations, curve fitting, planes and lines in solid analytic geometry, and surfaces in solid analytic geometry. (3 units)

### **GTM 7103 Advanced Calculus 1**

Advanced differential calculus. Covers the first and higher derivatives of a vector function; derivatives and differentials of functions; partial derivatives of higher order; higher derivatives of implicit functions; maxima and minimal of functions of several variables; vector field; gradient field; the curl of a vector field, and vector in space of more than three dimensions. (3 units)

### **GTM 7104 Matrix Algebra**

Starts with matrix operations and different kinds of matrices followed by determinants, inverse of a matrix, rank and equivalence, linear equations and linear dependence, vector spaces and linear transformations, unitary and orthogonal transformations, the characteristic equation of a matrix, and bilinear, quadratic, and Hermitian forms. (3 units)

### **GTM 7106 Trends in Teaching Mathematics**

An overview of the newest trends and developments in teaching mathematics from various theoretical and practical perspectives. (3 units)

### **GTM 7105 Vector and Tensor Analysis**

Starting with the algebra of vectors, the course covers such topics as oriented Cartesian vectors, non-Euclidean manifolds, absolute differentiation, solenoidal tensor, Ricci-Einstein tensors, and applications. (3 units)

### **GTM 7107 Curriculum Development**

Critical study of development in the theory and practice of curriculum making. Comprehensive consideration of newer curriculum practices, the philosophy and psychology upon which they are based, and newer methods by which they are evaluated. (3 units)

### **GTM 7108 Theory of Rings and Groups**

Designed for students who have already taken an introductory background in the methods and concepts of abstract algebra. Starting from simple definitions and examples, the course covers ideals and homomorphisms, subdirect sums, endomorphisms and linear transformations, the Jacobian radical, and other important topics. Deals with the study of group theory followed by different kinds of groups – groups of real and complex, the symmetric groups, the group of Mobius transformations, cyclic groups, finite groups and abelian groups. (3 units)

### **GTM 7109 Advanced Calculus II**

Advanced integral calculus. Broad topics covered are integrals of the functions of several variables, vector integral calculus; the infinite series and the Fourier series. Some specific topics are improper integrals, i, line integrals, integrals depending on a parameter, line integrals, Stoke's Theorem, integrals independent of path and the series. (3 units)

### **GRR 7700 Comprehensive Examination**

Prerequisite: Completion of all course work. (0 units)

**GRR 7903      Action Research**

Research designed to diagnose education problems or weaknesses to help educators solve them practically, quickly and efficiently (3 units, Prerequisite: Completion of all course work)

**GRR 7904      Case Writing in Education**

Writing reports on analysis of cases in education (3 units, Prerequisite: GRR 793)

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