

Section 10: Course Descriptions—Mathematics (EX)

MTH 111	Mathematical Analysis I	3 credits
<i>Prerequisite: MTH 101 or equivalent.</i>		
Equations and inequalities; graphs and functions; polynomials and rational functions; exponential and logarithmic; systems of equations and inequalities; matrices and determinants, conic sections.		
MTH 112	Mathematical Analysis II	3 credits
<i>Prerequisite: MTH 111 or equivalent</i>		
Pre-calculus topics; derivatives and integrals; applications; techniques of integration.		
MTH 140	Elementary Functions	3 credits
<i>Prerequisite: MTH 101 or equivalent</i>		
Study of functions, including polynomials; rational, algebraic, exponential, logarithmic and trigonometric functions. Computer laboratory included.		
MTH 141	Analytic Geometry and Calculus I	3 credits
<i>Prerequisite: MTH 140 or equivalent</i>		
Functions; limits and continuity; derivatives and integrals of polynomial, rational and trigonometric functions. Computer laboratory included.		
MTH 142	Analytic Geometry and Calculus II	3 credits
<i>Prerequisite: MTH 141 or equivalent</i>		
Topics in analytic geometry, differentiation and integration of exponential, logarithmic and inverse trigonometric functions; sequences and series. Computer laboratory included.		
MTH 241	Analytic Geometry and Calculus III	4 credits
<i>Prerequisite: MTH 142 or equivalent</i>		
Plane curves; polar coordinates; vectors in two and three dimensions; analytic geometry in the three dimensions; vector valued functions; partial derivatives and multiple integrals.		
MTH 402	Linear Algebra with Applications	3 credits
<i>Prerequisite: MTH 142, or permission of instructor.</i>		
Vector spaces; matrices; systems of linear equations; determinants; inner products; linear transformations; similar matrices; eigenvalues and eigenvectors of a matrix.		
MTH 405	Introduction to Modern Algebra I	3 credits
<i>Prerequisite: MTH 276, 402, or 410, or permission of instructor.</i>		
Sets and mappings; an axiomatic approach to the number system; groups; rings; ideals; fields; isomorphism theorems; induction; permutations.		
MTH 427	Applied Probability and Statistics	3 credits
<i>Prerequisite: MTH 241.</i>		
Introductory probability theory; elements of sampling and descriptive statistics, sampling distributions; estimations and hypothesis testing; regression and correlation analysis; computer laboratory using a statistical software package.		
MTH 477	Concepts of Modern Elementary School Mathematics I	3 credits
<i>Prerequisite: MTH 101 or equivalent.</i>		
Credit applies only in undergraduate or graduate programs in mathematics education. Sets, logic, mathematical systems, systems of numeration, natural numbers, whole numbers, integers, rational numbers, real numbers.		

