

Curriculum Map: Mathematics BA

Date: 10/9/2018

#	Program Goals (PGs) & Program Student Learning Outcomes (PSLOs)	Foundation Courses	Required Courses					Core Courses										
		MATH 121	MATH 122	MATH 221	MATH 333	MATH 336	MATH 481-489	MATH 210	MATH 211	MATH 313	MATH 223	MATH 225	CS 291	CS 341	MATH 423	MATH 479	MATH 243	MATH 244
PG1	Students should be able to demonstrate an understanding of the core concepts of differential and integral calculus, differential equations, and linear algebra																	
PSLO 1.1	Students should be able to compute limits, derivatives, and integrals, and determine the convergence or divergence of series.	I	R	M											M			
PSLO 1.2	Students should be able to solve first-order differential equations (using various methods) and higher-order differential equations with constant coefficients.										I/R							
PSLO 1.3	Students should be able to solve systems of linear equations, understand the notions of vector spaces and subspaces, and compute the determinant and the eigenvalues of a matrix.				I/R													
PG 2	Students should be able to demonstrate the ability to think logically and construct logical arguments, and to apply mathematical proof techniques in a wide variety of mathematical areas, including algebra and analysis.																	
PSLO 2.1	Students should be able to write proofs which show comprehension of the fundamentals of logic and set theory.											I						
PSLO 2.2	Students should be able to understand and write basic proofs in the theory of algebraic structures, and construct homomorphism and isomorphisms.					I/R												
PSLO 2.3	Students should be able to understand and write basic proofs that deal with the formal properties of real numbers and the theory of real-valued functions.													I/R				
PG 3	Students should be able to demonstrate the ability to analyze and solve problems in applied mathematics, both through theoretical and applied techniques.																	
PSLO 3.1	Students should be able to apply elementary techniques from statistics and probability to carry out data analysis and their relation with various distributions.							I	R	R								
PSLO 3.2	Students should be able to implement different algorithms and data structures to find exact or approximate solutions to computational problems.									R		I/R	R					
PG 4	Students should be able to demonstrate an understanding of the problems and techniques of classical and modern mathematics.																	
PSLO 4.1	Students should be able to explain the different philosophic views of mathematics ranging from formalism to intuitionism, and the relationship of mathematics to the physical world and human development.															I/R		
PSLO 4.2	Students should be able to understand the different models of geometry, including the Euclidean and non-Euclidean systems.																I/R	I/R
PSLO 4.3	Students should be able to read and investigate topics of recent research interest in mathematics, or explain some of the developments of current interest.						I/R											

Scale: I-Introduced; R-Reinforced; M-Mastered