DEPARTMENT OF MATHEMATICS
PROGRAMME OUTCOMES (M. Sc)

PO1:	Acquire in-depth knowledge of Mathematics both in theory and application.
PO 2:	Recognizethevariousspecializedareasofadvancedmathematicsanditsapplications.
PO 3:	Analyze and interpret data to create and design new knowledge for complex problems.
PO 4:	Develop the mathematical models for the applications of mathematics in real life situations.
PO 5:	Develop the skills to crack the various competitive examinations.
PO 6:	Abilitytoengageinlife-longlearninginthecontextoftherapiddevelopmentsinthe field.

COURSE OUTCOMES

Course Code	Course Name	Course Outcomes
GMA11	Algebra-I	• To introduce the concepts and to develop working knowledge on class equation, finite abelian groups, linear transformations, real quadratic forms.
GMA12	Real Analysis-I	• To work comfortably with functions of bounded variation, Riemann - Stieltjes Integration, convergence of infinite series, infinite product and uniform convergence and its interplay between various limiting operations.
GMA13	Ordinary Differential Equations	• To develop strong background on finding solutions to linear differential equations with constant and variable coefficients and also with singular points, to study existence and uniqueness of the solutions of first order differential equations.
Semester-II		
GMA21	Algebra-II	• To study field extension, roots of polynomials, Galois Theory, finite fields, division rings, solvability by radicals and to develop computational skill in abstract algebra.
GMA22	Real Analysis-II	• To introduce measure on the real line, Lebesgue

		measurability and integrability, Fourier Series and Integrals, in-depth study in multivariable calculus.
GMA23	Partial Differential Equations	• The aim of the course is to introduce to the students the various types of partial differential equations and how to solve these equations.
Semester-III		
DMA31	Complex Analysis-I	• To Study Cauchy integral formula, local properties of analytic functions, general form of Cauchy's theorem and evaluation of definite integral and harmonic functions.
DMA32	Topology	• To study topological spaces, continuous functions, connectedness, compactness, countability and separation axioms.
DMA33	Operation Research	• This course aims to introduce decision theory, PERT, CPM, deterministic and probabilistic inventory systems, queues, replacement and maintenance problems.
Semester-IV		
DMA41	Complex Analysis-II	• To study Riemann Theta Function and normal families, Riemann mapping theorem, Conformal mapping of polygons, harmonic functions, elliptic functions and Weierstrass Theory of analytic continuation.
DMA42	Functional Analysis	• To study the details of Banach and Hilbert Spaces and to introduce Banach algebras.
DMA43	Mathematical Statistics	• This course introduces sampling theory, significance tests, and estimation, testing of hypotheses, ANOVA and sequential analysis with rigorous mathematical treatment.
Core Elective (Semester-I, II, III & IV)		
GEMA14C	Graph Theory	• To study and develop the concepts of graphs, subgraphs, trees, connectivity, Euler tours, Hamilton cycles, matching, coloring of graphs, independent sets, cliques, vertex coloring, and planar graphs.
GEMA24C	Difference Equations	• To introduce the process of discretization, Discrete version of Differential Equations, Discrete oscillation and the asymptotic behavior of solutions of certain class of difference equations for linear cases only. Solution of difference equations using z-transforms is stressed.
DEMA34C	Operation Research	• To understand the steps in decision theory and tree analysis, Make distinctions among various types of replacement and maintenance techniques. Solve an LPP using dynamic programming approach.. Use differential calculus based

		methods to obtain the optimal solutions, Derive and use Kuhn-Tucker conditions necessary for optimal value of an objective function.
DEMA44A	Number Theory And Cryptography	• To demonstrate ability to learn elementary ideas from number theory will have applications in cryptography. Introduce various cryptosystems and apply them in the necessary fields, Understand the concepts of public key and primality, Learn the public key cryptography and RSA algorithm, Get the knowledge about Factoring concepts.