Programme Ph.D. Mathematics

PROGRAM OUTCOMES (POS)

PO 01: Students archive knowledge of different branches of Mathematics.

PO 02: Develop the skill of formulating real word problem into mathematical models.

PO 03: Handling different industrial problem and their solutions.

PO 04: Applying different Numerical techniques in solution of linear and non-linear real-world problem.

PO 05: Applying different software in research work.

PO06: Enhance the Logical approach in different fields.

PO 07: Enhance ethical knowledge.

PO 08: Handling different type problems with patience.

PO 09: Programming capacity of the students increases.

PO10: learners apply his/her knowledge for betterment of the society.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO 01: After completion of this program mentally thinking power will by high.

PSO 02: Reasoning and analytical approach increases.

PSO 03: Students get good job in research and industry after completion this program.

PSO 04: After completion this program mentally thinking power will by high

PSO 05: learners become good manager since they understand different optimization techniques.

PSO 06 It refines the mental ability of the students.

PSO 07 Learners knowledge uplift the society.

Ph.D. Mathematics

Course outcome

Course	Course Outcome (COs)
	Ph.D. Mathematics
Research Methodology (MATH-609)	CO 01: Student will be able to learn how to write synopsis. CO 02: Student will be able to understand about basic terms of statistics. CO 03 : Student will be able to learn application of computer fundamentals in research . CO 04: Student will be understood about plagiarism and IPR.
Stochastic Processes and its application (MATH-622)	CO 01: Student will be understood about probability theory. CO 02: Student will be understood about different type distributions. CO 03: Student will be able to solve gambler's ruin. CO 04: Student will be understand Chapman Kolmogorov equations.
Fuzzy Set Theory (MATH-623)	CO 01: Student will be able to differentiate between fuzzy set and crisp set. CO 02: Student will be understand about Fuzzy union algebraic sum and bounded sum in Fuzzy set theory. CO 03: Student will be able to understand Fuzzy Equations, Fuzzy number, Convex Fuzzy set. CO 04: Student will be understand about Fuzzy morphism.
Operation Research: Theory and its Applications (MATH-624)	CO 01: Student will be able to understand hyper surface and convex theory. CO 02: Student will be able to solve LPP. CO 03: Student will be able to solve transportation problem. CO 04: Student will be able to solve Two person zero sum game.
Optimization Techniques (MATH-625)	CO 01: Student will be able to understand the convex hull. CO 02: Student will be able to solve LPP. CO 03: Student will be able to solve Lagrangian dual problem.

	CO 04: Student will be able to understand first and second order optimality conditions.
Genetic Algorithms , Artificial Neural Networks and Applications (MATH-626)	CO 01: Student will be able to understand applications of the genetic algorithm. CO 02: Student will be able to solve TSP. CO 03: Student will be able to understand solve artificial neural networks CO 04: Student will be able to understand image processing and computer vision.
Application of Finite Element Method in Mathematical Modeling (MATH-627)	CO 01: Student will be able to understand different type polynomial approximations. CO 02: Student will be able to understand Mathematical Modeling. CO 03: Student will be able to solve Eigen value Problems. CO 04: Student will be able to understand heat and wave equations.
Digital Image Processing (MATH-628)	CO 01: Student will be able to understand about fundamentals of image processing. CO 02: Student will be able to understand about image restoration. CO 03: Student will be able to understand about image compression. CO 04: Student will be able to understand the Fourier transformation.
Digital Image Processing (MATH-628)	CO 01: Student will be able to understand about fundamentals of image processing. CO 02: Student will be able to understand about image restoration. CO 03: Student will be able to understand about image compression. CO 04: Student will be able to understand the Fourier transformation.
Graph Theory and its applications (MATH-629)	CO 01: Student will be able to understand about fundamentals of graph. CO 02: Student will be able to understand about automorphism and Cayley graph. CO 03: Student will be able to understand about minimum and maximum imbedding. CO 04: Student will be able to understand graphical measurement.
Foundations of Fourier and Wavelet	CO 01: Student will be able to understand metric space and Normed linear space CO 02: Student will be able to understand about Fourier series

Analysis (MATH-630)	. CO 03: Student will be able to understand about Fourier transform. CO 04: Student will be able to understand about wavelet transform.
Advanced Time Frequency-Wavelet Transform Methods and their Applications Analysis (MATH-631)	CO 01: Student will be able to understand Fourier analysis. CO 02: Student will be able to understand about time frequency methods. CO 03: Student will be able to understand about orthogonal wavelet packets CO 04: Student will be able to understand about estimation in wavelet.
Advanced Fluid Mechanics (MATH-632)	CO 01: Student will be able to understand behaviour of fluids . CO 02: Student will be able to understand velocity and acceleration of fluids. CO 03: Student will be able to understand about steady flow. CO 04: Student will be able to understand behaviour of waves in liquid.
Dynamical System (MATH-633)	CO 01: Student will be learn about linear and nonlinear dynamical system. CO 02: Student will be learn about circuit theory. CO 03: Student will be able to understand about bifurcation theory. CO 04: Student will be able to understand about stability analysis.
Topology and Differential Geometry (MATH-634)	CO 01: Student will be learn about topological space. CO 02: Student will be able to understand about manifolds. CO 03: Student will be able to understand about different type bundles. CO 04: Student will be able to understand about lie algebra.
Commutative Algebra (MATH-635)	CO 01: Student will be learn about rings and modules. CO 02: Student will be learn about ideal domain. CO 03: Student will be able to understand Dedekind domain. CO 04:Student will be able to understand about fractional ideals.
Applied Functional Analysis (MATH-636)	CO 01: Student will be learn about Normed linear and Banach spaces. CO 02: Student will be learn about dual space. CO 03: Student will be able to understand about spectral theory.

	CO 04: Student will be able to understand about compact operators.
Analysis (MATH-637)	CO 01: Student will be learn about linear transformation. CO 02: Student will be learn about measure theory. CO 03: Student will be learn about lebesgue integran and its convergence. CO 04: Student will be learn about convex function
Numerical Techniques and its Application in Differential equation (MATH-638)	CO 01: Student will be able to solve linear algebraic equations. CO 02: Student will be able to solve BVP. CO 03: Student will be able to understand least square method. CO 04: Student will be learn about different numerical Methods.