GOVERNMENT DEGREE COLLEGE, NAIDUPET

DEPARTMENT OF MATHEMATICS

PROGRAMME OUTCOMES

PSO 1: Know and demonstrate understanding of the concepts from different branches of Mathematics (Calculus, Solid Geometrics, Abstract algebra, Linear Algebra, Fluid Mechanics, Number theory, Integral Transformations)

PSO 2: Use appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real life context and in competitive world in getting jobs

PSO 3: Develop the knowledge, skills and attitudes necessary to pursue further studies in Mathematics and research in Mathematics

PSO 4: To think in a critical manner.

PSO 5: To Formulate and develop mathematical arguments in a logical manner

PSO 6: Acquire good knowledge and understanding in advanced areas of mathematics chosen by the student from the given courses

COURSE OBJECTIVES AND OUTCOMES

YEAR	SEMESTER	TITLE OF THE PAPER	COURSE OBJECTIVES	COURSE OUTCOMES
I	I	DIFFERENTIAL EQUTIONS	To Learn what are differential equations and types of Differential Equations.	CO1: To recognize the type of given differential equation and able to solve that D.E. CO2: Finding the orthogonal trajectories of given family of curves by using differential equations. CO3: To get awareness on applications of differential equations in various fields.
I	II	SOLID GEOMETRY	To educate the student to learn about what are 3-D Objects and properties of 3-D objects by using Cartesian coordinate system.	CO1: To find the location of objects in space. CO2: To know the properties of lines, planes, sphere, cylinder and cone. CO3: To get awareness about application of solid geometry in various fields like astronomy Antennas etc.

II	I	GROUP THEORY	Studying about algebraic structures with one binary operation.	CO1: Generalization of arithmetic operations addition and multiplication of the real numbers. CO2: To recognize similar groups by using the concept of isomorphism. CO3: To recognize whether a group is normal sub group (or) cyclic group (or) abelian group (or) Permutation group. CO4: To understand every group is nothing but a permutation group. CO5: To get awareness about group theory applications in brain scanning, solving quintic equations etc.
II	II	REAL ANALYSIS	To learn about open and closed sets, limit point, concepts of derivative and integration	CO1: To know the properties of real numbers. CO2: To find whether a sequence (or) series is convergent (or) divergent. CO3: To recognize whether a function is continuous, derivable, integrable (or) not. CO4: To find the rate of change, slope of a curve by using derivatives and to find areas by Using integration.

III	I	RING THEORY AND MATRICES	To learn about the algebraic structures with two binary operations; Rank of a matrix and the eigen values and vectors of square matrix.	CO1: To recognize the types of rings like commutative ring, Integral domain, Boolean ring, field, ideals etc. CO2: To find the properties of algebraic structures with two binary operations by using rings. CO3: To solve the given system of equations and find whether the system has infinitely many Solutions (or) unique solution (or) no solution. CO4: To find the characteristic equation, characteristic .roots, characteristic vectors of a given square matrix
III	I	LINEAR ALGEBRA	Studying about algebraic structure with one operation and an external operation between the elements in the algebraic structure and a field.	CO1: By generalizing the properties of vectors we get vector space and by using this vector Space to find the properties of vectors. CO2: To recognize whether two vector spaces are similar or not by using isomorphism. CO3: To know every homomorphic image of a vector space is nothing but a quotient group of the vector space. CO4: To find same inequalities in real numbers and complex numbers by using Cauchy Schwartz inequality.

III	II	VECTOR CALCULUS	To Know about the vector quantities by using Calculus.	CO1: To find the gradient of scalar point function.
				CO2: To find the divergence and curl of a vector point function.
				CO3: To find integral of a function along a curve, on the surface, on the region of a solid figure.
				CO4: To find the relations between line integral, surface integral and volume integral.
III	II	LAPLACE TRANSFORMS	To study the applications of Laplace Transforms in solving DE and IE	CO1: To know the definition of Laplace transform and properties of Laplace transforms.
				CO2: To understand linear property, first shifting theorem, second shifting theorem, change of scale property etc of L.T & I.L.T.
				CO3: To find L.T of some standard functions, trigonometric functions, exponential functions And Bessel function etc.

III	II	INTEGRAL TRANSFORMS	To study the applications of Integral Transforms in solving IE.	CO1: To solve the linear differential equations with constant coefficients and variable coefficients, integral equations, partial differential equations by using Laplace transforms.
				CO2: To solve I.E by using Fourier transforms.
				CO3: Applications of integral transforms to evaluate the performance of automatic control system, circuit problems,beams problems etc