DEPARTMENT OF MATHEMATICS

Course Outcomes:

Paper	Paper Name	Outcomes After completion of the course the student should be able to
SEMESTER I		
PAPER – I	Differential Equations	**CO 1**.Solve linear differential equations **CO 2**.Convertnonexact homogeneous equations to exact differential equations by using integrating factors. **CO 3**.Know the methods of finding solutions ofdifferential equations of the firstorder but not of the firstdegree. **CO 4**. Solvehigher-order linear differential equations, both homogeneous and non homogeneous, with constant coefficients. **CO 5**. Understand the concept and apply appropriate methods for solving differential equations
SEMESTER II		
PAPER – II	Solid Geometry	**CO 1**. Get the knowledge of planes. **CO 2**. Basic idea of lines, sphere and cones. **CO 3**. Understand the properties of planes, lines, spheres **CO 4**. Express the problems geometrically and then to get the solution. **CO 5.** Understand the properties of cones

SEMESTER III		
PAPER – III	**Abstract Algebra**	CO 1: Acquire the basic knowledge and structure of groups, subgroups and cyclic groups. CO 2 : Acquire the basic knowledge and structure of subgroups and normal groups CO 3 :Get the significance of the notation of a normal subgroups. study the homomorphisms and isomorphisms with applications CO 4: Get the behaviour of permutations and operations on them CO 5.Understand the ring theory concepts with the help of knowledge in group theory and to prove the theorems. understand the applications of ring theory in various fields..
SEMESTER IV		
PAPER – IV:	**Real Analysis**	**CO 1** :Students will be able to recognise bounded, convergent, divergent and other features of real lines. **CO 2:** Students will be able to apply the ratio test, root and alternating series tests as well as the limit comparision test, to determine the convergence and absolute convergence of an infinite series of real numbers. **CO 3**: Test the continuity and differentiability **CO 4:** Know the geometrical interpretation of mean value theorem **CO 5 :** Conceptualise Upper Darboux sum U(P, f) and lower Darboux sum L(P, f) and associated results. Upper integral and lower integral. .

PAPER – V:	**Linear Algebra**	**CO 1 :** Understand the concepts of vector spaces, subspaces **CO 2 :** Demonstrate understanding of linear independence, span, and basis **CO 3:** Understand the concepts of linear transformations and their properties **CO 4 :** Apply Cayley- Hamilton theorem to problems for finding the inverse of a matrix and higher powers of matrices without using routine methods **CO 5 :** Learn the properties of inner product spaces and determine orthogonality in inner product spaces
SEMESTER V		
PAPER – VI(A)	**Numerical Methods**	**CO 1 :** Understand the subject of various numerical methods that are used to obtain approximate solutions **CO 2 :** Understand various finite difference concepts and interpolation methods. **CO 3 :** Work out numerical differentiation and integration whenever and wherever routine methods are not applicable. **CO 4 :** Find numerical solutions of ordinary differential equations by using various numerical methods. **CO 5 :** Analyze and evaluate the accuracy of numerical methods.
PAPER – VI(B)	**Mathematical Special Functions**	**CO 1 :** Understand the Beta and Gamma functions, their properties and relation between these two functions, understand the orthogonal properties of Chebyshev polynomials and recurrence relations. **CO 2 :.**Find power series olutions of ordinary differential equations. **CO 3 :** solveHermite equation and write

		the Hermite Polynomial of order (degree) n, also find the generating function for Hermite Polynomials, study the orthogonal properties of Hermite Polynomials and recurrence relations. **CO 4 :** Solve Legendre equation and write the Legendre equation of first kind, also find the generating function for Legendre Polynomials, understand the orthogonal properties of Legendre Polynomials. **CO 5 :** Solve Bessel equation and write the Bessel equation of first kind of order n, also find the generating function for Bessel function understand the orthogonal properties of Bessel unction