Department of Mathematics

Course Outcome (**Differential Calculus**)
CO1 Determine the points of continuity and discontinuity using the definition of limit.
CO2 Understand the consequences of the Mean value theorem for continuous functions.
CO3 Use the Euler's theorem for homogenous function.
CO4 Trace the curves in Cartesian and polar form using the concepts of maxima and minima, asymptotes, tangent and normal, singular points of functions of single and two variables.

Course Outcome (Differential Equations)
CO1 Formulate and solve differential equations arising from changes in physical world.
CO2 Solve the first order exact differential equation by different methods.
CO3 Solve the linear homogeneous equations with constant coefficients, linear non-homogenous equations.
CO4 Formulate the first order partial differential equation. Using Lagrange and Charpit's method for finding the solution of partial differential equation.

Course Outcome (Vector Calculus)
CO1 Find multiple products of three and more vectors.
CO2 Find differentiation and partial differentiation of vector functions.
CO3 Understand the notions of gradient, divergence and curl.
CO4 Verify Green's theorem, Gauss's and Stoke's theorem.

Course Outcome (Real Analysis)
CO1 Define and recognize the basic properties of field of real numbers.
CO2 Understand the concept of limit point and Bolzano-Weierstrass theorem.
CO3 Define and recognize the series and sequence of real numbers and their convergence.
CO4 Understand the concept of Riemann integral and its properties.

Course Outcome (Ancient Indian Mathematics)
CO1 Understand the fastest calculations in arithmetic.
CO2 Understand the work of Indian mathematician in context

Course Outcome (Algebra)
CO1 Understand the basic properties of groups, identify abelian and non-abelian groups.
CO2 Discuss the Lagrange's theorem and its consequences.
CO3 Characterize the cyclic groups, normal subgroups, simple groups.
CO4 Extend group structures to ring, integral domain and field.

Course Outcome (Basic Statistics)
CO1 Define and recognize the basic properties of probability and the Baye's theorem.
CO2 Study binomial, Poisson, normal, gamma and beta distributions.
CO3 Know about notions of the correlation and regression.

Course Outcomes (Linear Algebra)
CO1 The concepts of vector spaces, quotient spaces, basis and dimension.
CO2 How to find rank and nullity of a linear transformation, matrix representation of a linear transformation.
CO3 How to find characteristic equation of a matrix and eigen values and eigen vectors.
CO4 About dual basis, isomorphism theorem and invertibility.

Course Outcomes (Complex Analysis)
CO1 Understand the concept of complex numbers, complex functions and their properties.
CO2 Discuss properties to analytic functions and Cauchy-Riemann equations.
CO3 Prove Cauchy-Goursat theorem, Cauchy integral formula and Liouville's theorem.
CO4 Give examples based on Taylor's and Laurent's series.