SUBJECT NO-MA20103, SUBJECT NAME- Partial Differential Equations

LTP- 3-0-0,CRD- 3

SYLLABUS :-

Prerequisite: void

Review of power series solution of ODE, Frobenius series, Bessel functions and Legendre polynomials.

Introduction to partial differential equations, linear and quasi-linear equations of first order. Classification of integrals. Lagrange's Method of solution and its geometrical interpretation, compatibility condition, Charpits method, special types of first order equations. Second order partial differential equations with constant and variable coefficients, classification and reduction of second order equation to canonical form., characteristics. Cauchy problem, Cauchy's, Neumann and Dirichlet problems. Fourier series solution of wave equation, vibrations of a string. Riemann's method for hyperbolic equation. Method of separation of variables to solve heat equation, Laplace equation, Diffusion equation. Integral transform method to solve second order partial differential equations.