SYLLABUS :-

Pre requisite: void

First order partial differential equations, linear and quasi-linear first order equations, method of characteristics, general first order equations, Cauchy problem for second order p.d.e. characteristics, canonical forms, Cauchy problem for hyperbolic equations, one dimensional wave equation, Riemann function, Banach spaces, linear functions and linear operators, Fredholm alternative in Banach spaces, the Fredholm alternative in Hilbert spaces, elements of potential theory, fundamental solutions, the maximum principle, Dirichlet problem for the disc, single and double layers, Poisson's equations, study of the Dirichlet problem, Greens function and separation of variables, Green's function of a second order differential operator, Eigen function expansions, the heat equation.