

LESSON PLAN

B.Sc 3rd Sem (NEP)

From 22nd July to 31st August

I Basic concepts and genesis of ordinary differential equations, Order and degree of a differential equation, Solutions of differential equation of first order and first degree, Exact differential equations, Integrating factor, first order higher degree equations solvable for x , y and p , Lagrange's equations, Clairaut's form and singular solutions. Orthogonal trajectories of one-parameter families of curves in a plane.

From 1st Sep. to 30 Sep.

II Solutions of linear ordinary differential equations with constant coefficients, linear non-homogenous differential equations. Linear differential equation of second order with variable coefficients. Method of reduction of order, Method of undetermined coefficients, Method of variation of parameters, Cauchy - Euler equation


From 1 Oct to 31st Oct

III Solution of simultaneous differential equations, total differential equations.

Genesis of Partial equation (PDE), Concept of linear and non-linear PDEs. Complete Solution, general solution and singular solution of a PDE, Linear PDE of first order. Lagrange's method for PDEs of the form: $P(x, y, z)p + Q(x, y, z)q = R(x, y, z)$ where $p = \partial z / \partial x$ and $q = \partial z / \partial y$.

November

IV Integral surfaces passing through a given surface, surfaces orthogonal to a given system of surfaces, Compatible systems of first order equations. Charpit's method, Special types of first order PDEs, Jacobi's Method, Second order partial differential equations with constant coefficients.


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