

Govt. College Sihma, Mahendergarh

Lesson Plan (Session 2021-22)

Name - Santayadav

Subject- Mathematics

Paper Name – Ordinary Differential Equations

Class - B.A. 1st year

21st March - 20 April

Unit - 1st

Geometrical meaning of a differential equation. Exact differential equations, integrating factors. First order higher degree equations solvable for x,y,p Lagrange's equations, Clairaut's equations. Equation reducible to Clairaut's form. Singular solutions.

20 April - 10 May

Unit - 2nd

Orthogonal trajectories: in Cartesian coordinates and polar coordinates. Self orthogonal family of curves.. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations. Equations reducible to homogeneous linear ordinary differential equations.

10 May - 20 May

Unit - 3rd

Linear differential equations of second order: Reduction to normal form. Transformation of the equation by changing the dependent variable/ the independent variable. Solution by operators of non-homogeneous linear differential equations. Reduction of order of a differential equation. Method of variations of parameters. Method of undetermined coefficients.

20 May onwards

Unit - 4th

Ordinary simultaneous differential equations. Solution of simultaneous differential equations involving operators $x (d/dx)$ or $t (d/dt)$ etc. Simultaneous equation of the form $Pdx + Qdy + Rdz = 0$. Total differential equations. Condition for $Pdx + Qdy + Rdz = 0$ to be exact. General method of solving $Pdx + Qdy + Rdz = 0$ by taking one variable constant. Method of auxiliary equations.

Revision & Tests

Santayadav

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