

Curriculum Plan: B.A(Programme) (Semester III)
DSC-A3, Differential Equations (2026-27)

Dr. Mohd Nadeem Assistant Professor Department of Mathematics Kalindi College University of Delhi Delhi- 110008			Marks Distribution	Theory-90 IA+CA-30+40
			Classes Assigned	Theory: 3per week
Reference		References: 1. Myint-U, Tyn and Debnath, Lokenath (2007). Linear Partial Differential Equations for Scientist and Engineers (4th ed.). Birkhäuser. Indian Reprint. 2. Ross, Shepley L. (1984). Differential Equations (3rd ed.). John Wiley & Sons. Suggestive Readings • Edwards, C. Henry, Penney, David E., &Calvis, David T. (2015). Differential Equations and Boundary Value Problems: Computing and Modeling (5th ed.). Pearson Education. • Kreyszig, Erwin. (2011). Advanced Engineering Mathematics (10th ed.). Wiley India. • Sneddon I. N. (2006). Elements of Partial Differential Equations. Dover Publications.		
Section	Week	Topics		
	1 st week	First order ordinary differential equations: Basic concepts and ideas, First order Exact differential equations,		
	2 nd week	Integrating factors and rules to find integrating factors, Linear equations and Bernoulli equations, Initial value problems,		
	3 rd week	Applications of first order differential equations: Orthogonal trajectories and Rate problems;		
	4 th week	Basic theory of higher order linear differential equations, Wronskian and its properties.		
	5 th week	Assignment submission and class test scheduled		

	6th week	Linear homogeneous equations with constant coefficients
	7th week	, Linear non-homogeneous equations, Method of undetermined coefficients, Method of variation of parameters
	8th week	, Two-point boundary value problems, Cauchy-Euler equations,
	9th week	System of linear differential equations.
	10th week	Classification and Construction of first-order partial differential equations
		Semester break and Home Exam
	11th week	, Method of characteristics and general solutions of first-order partial differential equations
	12th week	, Canonical forms and method of separation of variables for first order partial differential equations;
	13th week	Classification and reduction to canonical forms of second-order linear partial differential equations and their general solutions.,
	14th week	Classification and reduction to canonical forms of second-order linear partial differential equations and their general solutions.,
	15th week	Classification and reduction to canonical forms of second-order linear partial differential equations and their general solutions.
Dispersal of classes, preparation leave and practical examination		