Govt. College for Girls Bastli, Karnal (Haryana)

Lesson-Plan (2024-25)

Name of the Teacher:- Subhash Chand (Asst. Prof. Maths)

Class:- BA(3rd Sem) **Subject:-** Differential Equation-1 **Paper Code:-** CC-3 /MCC-4 (B-23-MAT-301)

Week	Topic Covered
1.	Basic concepts and genesis of ordinary differential equations, Order and degree of a differential equation, Solutions of differential equations of first order and first degree
2.	Exact differential equations, Integrating factor, First order higher degree equations solvable for x, y and p,
3.	Lagrange's equations, Clairaut's form and singular solutions Orthogonal trajectories of one-parameter families of curves in a plane.
4.	Solutions of linear ordinary differential equations with constant coefficients linear non-homogeneous differential equations
5.	Linear differential equation of second order with variable coefficients Method of reduction of order
6.	Method of undetermined coefficients method of variation of parameters Cauchy-Euler equation.
7.	Solution of simultaneous differential equations total differential equations Genesis of Partial differential equations (PDE),
8.	Concept of linear and nonlinear PDEs Complete solution

	general solution and singular solution of a PDE Linear PDE of first order.
9.	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 $q=\partial z/\partial y$.
10.	Integral surfaces passing through a given curve Surfaces orthogonal to a given system of surfaces Compatible systems of first order equations
11.	Charpit's method Special types of first order PDEs Jacobi's method
12.	Second Order Partial Differential Equations with Constant Coefficients Sassional and revision

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Lesson-Plan (2024-25)

Name of the Teacher:- Subhash Chand (Asst. Prof. Maths)

Class:- BA(1st Sem) **Subject:-** **Paper Code:-**

Week	Topic Covered
1.	ε-δ definition of limit and continuity of a real valued function, Basic properties of limits, Types of discontinuities,
2.	Differentiability of functions, Application of L'Hospital rule to indeterminate forms, Successive differentiation,
3.	Leibnitz theorem, Taylor's and Maclaurin's series expansion with different forms of remainder.
4.	Asymptotes: Horizontal, vertical and oblique asymptotes for algebraic curves, Asymptotes for polar curves,
5.	Intersection of a curve and its asymptotes, Curvature and radius of curvature of curves (Cartesian, parametric, polar & intrinsic forms)
6.	. Newton's method, Centre of curvature and circle of curvature.
7.	Multiple points, Node, Cusp, Conjugate point,

8.	Tests for concavity and convexity, Points of inflexion,
9.	Tracing of curves, Reduction formulae.
10.	Rectification, intrinsic equation of a curve, Quadrature,
11.	Area bounded by closed curves, Volumes and surfaces of solids of revolution
12.	Sessional and revision

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Lesson-Plan (2024-25)

Name of the Teacher:- Subhash Chand (Asst. Prof. Maths) **Class:-** BCom(1st Sem)
Subject:- Buisness Math-1 **Paper Code:-** CC-M1 (B23-com-104)

Week	Topic Covered
1.	Set Theory: Representation of sets, equivalent sets, power set, complement of a set.
2.	Venn Diagrams: Union and intersection of 8 sets, De-Morgan's laws; Logical statements and truth tables.
3.	Logarithms: Laws of operation, log tables
4.	Arithmetic and geometric progression. Revison and Test
5.	Matrices and Determinants: Definition of a matrix, order, equality, types of matrices;
6.	. Operations on matrices: Addition, multiplication and multiplication with a scalar and their simple properties.
7.	Solutions of cubic equations (Cardon's method), Biquadratic equations and their solutions Divisibility, Greatest common divisor (gcd), Least common multiple (lcm), Prime numbers, Fundamental theorem of arithmetic.
8.	Determinant of a square matrix (upto 3x 3 order): Properties of determinants, minors,

	co-factors and applications of determinants in finding the area of triangle
9.	adjoint and inverse of a square matrix, solutions of a system of linear equations by examples
10.	Compound interest and annuities: Different types of interest rates, types of annuities,
11.	Present value and amount of an annuity (including the case of continuous compounding), valuation of simple loans and debentures, problems related to sinking funds.
12.	Revision and Unit Test