

LESSON PLAN OF MATHEMATICS DEPT.

Name Of College: Govt College for Girls Sector- 52, Gurugram,

Academic Session :2025-26

Semester: Odd, (August 2025 to November 2025)

Name of Teacher: Dr. Sudesh Kumari/ Dr. Kusum Saharan

Subject: CALCULUS

Class: B.A/B.Sc. 1stSEMESTER

August 2025

Definition of the limit of a function. Basic properties of limits, Continuous functions and Types of discontinuities. Differentiability of functions. Indeterminate forms. Successive differentiation. Leibnitz theorem. Maclaurin and Taylor series expansions with different forms of remainder.

September 2025

Asymptotes: Horizontal, vertical and Oblique asymptotes for algebraic curves in Cartesian coordinates, intersection of curve and its asymptotes, asymptotes in polar coordinates. Curvature, radius of curvature for Cartesian curves, parametric curves, polar curves and Intrinsic forms. Assignment and Test

October 2025

Multiple Points, Node, Cusp, Conjugate point, Test of concavity and convexity, Points of inflexion, Tracing of curves in Cartesian, parametric and polar co-ordinates. Reduction formulae. Assignment and Test

November 2025

Rectification, intrinsic equations of curve. Quadrature (area)Sectorial area. Area bounded by closed curves. Volumes and surfaces of solids of revolution. Revision

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Name of Teacher: Dr. Sudesh Kumari/ Dr. Kusum Saharan

Subject: Ordinary and Partial Differential Equations

Class: B.A/B.Sc. 3rd SEMESTER

August 2025

Genesis of ordinary differential equations, Solutions of differential equations of first order and first degree, Exact differential equations, First order higher degree equations solvable for X, y and p, Lagrange's equations, Clairaut's form and singular solutions, Orthogonal trajectories in Cartesian coordinates and polar coordinates. Self orthogonal family of curves.

September 2025

Linear differential equations with constant coefficients, Linear non homogenous differential equations. Linear differential equation of second order with variable coefficients. Reduction of order of a differential equation, method of undetermined coefficients, method of variation of parameters. Cauchy-Euler equation.

October 2025

Ordinary simultaneous differential equations, total differential equations. Partial Differential Equations: Formation, order and degree. Linear and Non-linear PDEs, Complete solution, Singular solution and General solution of a PDE. Linear PDE of first order, Solution of Lagrange's linear equations.

November 2025

Solution of PDE passing through a given curve. Surfaces orthogonal to a given system of surfaces. Compatible system of first order equations. Jacobi's method. Charpit's general method of solution, Special types of first order PDEs, Second order partial differentialequations with constant coefficients.

LESSON PLAN OF MATHEMATICS DEPT.

Name Of College: Govt College Rithoj, Gurugram,

Academic Session :2025-26

Semester: Odd, (August 2025 to November 2025)

Name of Teacher: Dr. Kusum Saharan

Subject: Introductory Mathematics

Class: B.Com/B.CA , 1stSEMESTER

August 2025

An introduction to matrices and their types, Operations on matrices.

September 2025

Complex numbers, Operations on complex numbers, polar form of the complex numbers, Modulus and argument of a complex number.

OCTOBER 2025

Arithmetic progression, Geometric progression, Harmonic progression, Arithmetic mean (A.M.), Geometric mean (G.M.), Relation between A.M. and G.M.

NOVEMBER 2025

Straight lines: Slope of a line and angle between two lines, Different forms of equation of a line: parallel to co-ordinate axes, point-slope form, slope-intercept form, two-point form, general form; distance of a point from a straight line.

LESSON PLAN OF MATHEMATICS DEPT.
Name Of College: Govt College Rithoj, Gurugram, Academic Session :2025-26 Semester: Odd, (August 2025 to November 2025) Name of Teacher: Dr. Sudesh Kumari Subject: Statistical Tools and Data Analysis Class: B.Com/B.CA , 3rdSEMESTER

August 2025

Introduction of Statistics, Basic knowledge of various types of data, Collection, classification, and tabulation of data. Presentation of data: histograms, frequency polygon, frequency curve and ogives.

September 2025

Measures of Central Tendency: Mean, median, mode, partition values. Measures of Dispersion: Absolute and relative measures of range, quartile deviation, mean deviation, standard deviation, coefficient of variation.

OCTOBER 2025

Correlation for Bivariate Data: Concept and types of correlation, Karl Pearson Coefficient of correlation and rank correlation coefficient. Linear Regression: Concept of regression, principle of least squares and fitting of straight line, properties of regression coefficients, standard error of estimate obtained from regression line, Angle between two lines of regression. Difference between correlation and regression.

NOVEMBER 2025

Sample population, characteristics of good sample. Types of sampling techniques, Sampling Errors, Testing of Hypothesis-Meaning, Type -I and Type-II Errors, Level of significance, Definition of Chi-Square statistic test, Definitions of t-test and F-test.