

INDIRA GANDHI NATIONAL COLLEGE LADWA
LESSON PLAN

Name of teacher: Ms. Rachna

Class: B.Sc. I

Semester: I

Credits: 4

Paper: Calculus

Course Code: B23-MAT-101

Session: 2026-2027

Month	Topics to be covered	Other Activity
Aug. 2026	ϵ - δ definition of limit and continuity of a real valued function, Basic properties of limits, Types of discontinuities, Differentiability of functions, Application of L' Hospital rule to indeterminate forms, Successive differentiation, Leibnitz theorem, Taylor' s and Maclaurin' s series expansion with different forms of remainder	Assignment 1 to be taken
Sept. 2026	Asymptotes: Horizontal, vertical and oblique asymptotes for algebraic curves, Asymptotes for polar curves, Intersection of a curve and its asymptotes, Curvature and radius of curvature of curves (cartesian, parametric, polar & intrinsic forms), Newton's method, Centre of curvature and circle of curvature.	Assignment 2 and Mid-term exam to be taken
Oct. 2026	Multiple points, Node, Cusp, Conjugate point, Tests for concavity and convexity, Points of inflexion, Tracing of curves, Reduction formulae.	Class test
Nov. 2026	Rectification, intrinsic equation of a curve, Quadrature, Area bounded by closed curves, Volumes and surfaces of solids of revolution.	Class test

INDIRA GANDHI NATIONAL COLLEGE LADWA
LESSON PLAN

Name of teacher: Ms. Rachna

Class: B.com I

Semester: I

Paper: Elements of Business mathematics

Course Code:.....

Credits: 2

Session: 2026-2027

Month	Topics to be covered	Other Activity
Aug. 2026	Set Theory: Representation of sets, equivalent sets, power set, complement of a set. Venn Diagrams: Union and intersection of sets, De-Morgan's laws; Logical statements and truth tables.	Assignment 1 to be taken
Sept. 2026	Logarithms: Laws of operation, log tables; Arithmetic and geometric progression	Assignment 2 and Mid-term exam to be taken
Oct. 2026	Matrices and Determinants: Definition of a matrix, order, equality, types of matrices; Operations on matrices: Addition, multiplication and multiplication with a scalar and their simple properties. Determinant of a square matrix (upto 3×3 order): Properties of determinants, minors, co-factors and applications of determinants in finding the area of triangle, adjoint and inverse of a square matrix, solutions of a system of linear equations by examples.	Class test
Nov. 2026	Compound interest and annuities: Different types of interest rates, types of annuities, present value and amount of an annuity (including the case of continuous compounding), valuation of simple loans and debentures, problems related to sinking funds.	Class test

INDIRA GANDHI NATIONAL COLLEGE LADWA
LESSON PLAN

Name of teacher: Ms. Rachna

Class: B.com

Semester:2

Paper: Elements of bussiness mathematics

Course Code: B23-MAT-101

Credits:2.

Session: 2026-2027

Month	Topics to be covered	Other Activity
Aug. 2026	Differentiation; derivative of simple functions and other functions (excluding trigonometric functions) having applications in business studies; Maxima and minima of Revenue, Cost, Demand, Production, Profit functions and other functions related to business and commerce.	Assignment 1 to be taken
Sept. 2026	Integration: Definite and indefinite (simple functions excluding trigonometric functions), basic rules of integration, application of integration in commercial and business problems.	Assignment 2 and Mid-term exam to be taken
Oct. 2026	Binomial Theorem; Permutations and Combinations.	Class test
Nov. 2026	Linear Programming: Formulation of linear programming problems (LPP) and their solution by graphical and simplex methods, Applications of linear programming in solving problems related to business and commerce.	Class test

INDIRA GANDHI NATIONAL COLLEGE LADWA
LESSON PLAN

Name of teacher: Ms. Rachna

Class: Bsc.

Semester: 2

Paper: Algebra and Number Theory

Course Code: B23-MAT-201

Credits: 4.

Session: 2026-2027

Month	Topics to be covered	Other Activity
Aug. 2026	Symmetric, Skew symmetric, Hermitian and skew Hermitian matrices, Elementary operations on matrices, Rank of a matrix, Inverse of a matrix, Linear dependence and independence of rows and columns of matrix, Row rank and column rank of a matrix, Eigen values, Eigen vectors and characteristic equation of a matrix, Minimal polynomial of a matrix, Cayley-Hamilton theorem and its use in finding the inverse of a matrix, Unitary and orthogonal matrices.	Assignment 1 to be taken
Sept. 2026	Relations between the roots and coefficients of general polynomial equation in one variable, Solutions of polynomial equations having conditions on roots, Common roots and multiple roots, Transformation of equations, Nature of the roots of an equation, Descarte's rule of signs.	Assignment 2 and Mid-term exam to be taken
Oct. 2026	Solutions of cubic equations, Biquadratic equations and their solutions. Divisibility, Greatest common divisor, Least common multiple, Prime numbers, Fundamental theorem of arithmetic.	Class test
Nov. 2026	Linear congruences, Fermat's theorem, Euler's theorem, Wilson's theorem and its converse, Chinese Remainder theorem, Linear Diophantine equations in two variables	Class test

INDIRA GANDHI NATIONAL COLLEGE LADWA
LESSON PLAN

Name of teacher: Ms. Rachna

Class: B.com II

Semester: III

Credits: 2

Paper: Reasoning (SEC)

Course Code: B23-SEC-327

Session: 2026-2027

Month	Topics to be covered	Other Activity
Aug. 2026	Series Completion, Wrong letter and wrong number series, Analogy	Assignment 1 to be taken
Sept. 2026	Coding and decoding, Place arrangement, Direction sense test, Blood relation, Family based puzzles	Assignment 2 and Mid-term exam to be taken
Oct. 2026	Arithmetic reasoning, Venn diagrams, Logical Venn Diagrams, Symbol Substitution	Class test
Nov. 2026	Choosing the odd figure, Analytical Reasoning, Water images, Mirror images	Class test

INDIRA GANDHI NATIONAL COLLEGE LADWA
LESSON PLAN

Name of teacher: Ms. Rachna Semester: III Session: 2026-2027 Credits:3

Paper: Elements of Mathematics for all (MDC) Course Code: B23-MAT-101

Month	Topics to be covered	Other Activity
Aug. 2026	The concept of a set, Types of sets, Operations on sets, Venn diagram, De-Morgan's laws. The concept of a function, Elementary functions and their graphical representation. Solution of simple quadratic and cubic equations, Solution of simultaneous linear equations up to three variables. Arithmetic progression, Geometric progression.	Assignment 1 to be taken
Sept. 2026	The concept of differentiation, differentiation of simple functions, second order differentiation, Maxima and minima of a function, Use of differentiation for solving problems related to real-life situations. Integration of simple algebraic, trigonometric and exponential functions.	Assignment 2 and Mid-term exam to be taken
Oct. 2026	Presentation of data: Frequency distribution and cumulative frequency distribution, Diagrammatic and graphical presentation of data, Construction of bar, Pie diagrams, Histograms, Frequency polygon, Frequency curve and Ogives. Measures of central tendency: Arithmetic mean, Median, Mode, Geometric mean and Harmonic mean for ungrouped and grouped data. Measures of dispersion: Concept of dispersion, Mean deviation and its coefficient, Range, Variance and its coefficient, Standard deviation.	Class test

Nov. 2026	Correlation: Concept and types of correlation, Methods of finding correlation: Scatter diagram, Karl Pearson's coefficients of correlation, Rank correlation. Linear regression: Principle of least square, Fitting of straight line, Two lines of regression, Regression coefficients. Solution of differential equations of first order and degree one with variable separable.	Class test
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