

Department of Mathematics

Lesson Plan Odd Sem. (2025-26)

Class: B.A./B.Sc. 1st Sem.

Paper: Functions and Algebra (DSC)

CODE: 24MATM401DS01

Date	Topic
15.07.2025 to 19.07.2025	Introduction of Syllabus and Scheme of Examination, Relations and its types, Problems based on Relations
21.07.2025 to 26.07.2025	Functions: Definition, Domain, Co-domain, Range; Composition of Functions, Discussion
28.07.2025 to 02.08.2025	Invertibility and Inverse of Functions, One-to-one correspondence of Functions, Related Problems
04.08.2025 to 09.08.2025	Cardinality of a set, Discussion on Problems related to Relations and Functions, Test of Section-I
11.08.2025 to 16.08.2025	General form of polynomial equation in one variable, Roots of equation, Relation between the roots and coefficients of equation, Related Problems
18.08.2025 to 23.08.2025	Solutions of polynomial equations having conditions on roots, Common roots and multiple roots, Discussion on Related Problems
25.08.2025 to 30.08.2025	Transformation of equations, Nature of the roots of an equation, Solutions of Cubic and Biquadratic equations, Related Problems
01.09.2025 to 06.09.2025	Discussion on problems of Section 1 and Section 2, Test
08.09.2025 to 13.09.2025	Matrix and its types, Related Problems
15.09.2025 to 20.09.2025	Rank of a matrix: Row Rank, Column Rank, Elementary Operations on matrices, Inverse of a matrix
22.09.2025 to 27.09.2025	Normal Form, PAQ Form, Linear dependence and independence of rows and columns of matrices
29.09.2025 to 04.10.2025	Application of matrices to a system of homogeneous and non-homogeneous equations, Theorems on consistency of a system of linear equations, Related Problems
06.10.2025 to 13.10.2025	Eigen Values and Eigen Vector, Related Problems
23.10.2025 to 01.11.2025	Characteristic equation of a matrix, Minimal polynomial of a matrix, Related Problems, Test
03.11.2025 to 08.11.2025	Cayley Hamilton Theorem and its use in finding the inverse of a matrix, Related Problems
10.11.2025 to 18.11.2025	Diagonalization of matrix, Revision of Syllabus



Lesson Plan Odd Sem. (2025-26)**Class: B.Com. 1st Sem.****Paper: Basic Mathematics (Minor)****CODE: 24MAT401MI01**

Date	Topic
15.07.2025 to 19.07.2025	Introduction of Syllabus and Scheme of Examination, Differentiation, Partial derivatives up to second order, Discussion
21.07.2025 to 26.07.2025	Homogeneity of functions and Euler's theorem; total differentials, Maxima and Minima, Related problems
28.07.2025 to 02.08.2025	Differentiation of implicit function with the help of total differentials, Discussion
04.08.2025 to 09.08.2025	Cases of one variable involving second or higher order derivatives, Cases of two variables involving not more than one constraint, Discussion
11.08.2025 to 16.08.2025	Integration: Integration as anti-derivative process, Standard forms
18.08.2025 to 23.08.2025	Methods of integration: by substitution, by parts, and by use of partial fractions with examples
25.08.2025 to 30.08.2025	Definite integration, Finding areas in simple cases, Consumers and producers surplus, Nature of Commodities learning Curve, Discussion
01.09.2025 to 06.09.2025	Leontiff Input-Output Model, Test
08.09.2025 to 13.09.2025	Matrices: Definition of matrix, Order of matrix, Related problems
15.09.2025 to 20.09.2025	Types of matrices, Related Problems
22.09.2025 to 27.09.2025	Algebra of matrices: Addition, Subtraction, Multiplication, Transpose, Properties of various types of matrices
29.09.2025 to 04.10.2025	Determinants, Properties of determinants
06.10.2025 to 13.10.2025	Calculation of values of determinants up to third order, Adjoint of a matrix
23.10.2025 to 01.11.2025	Inverse of a matrix: Through Adjoint and elementary row or column operations, Test
03.11.2025 to 08.11.2025	Solution of system of linear equations having unique solution and involving not more than three variables, Related problems
10.11.2025 to 18.11.2025	Discussion, Revision



Lesson Plan Odd Sem. (2025-26)**Class: B.A. 1st Sem.****Paper: Introductory Mathematics (Multidisciplinary)****CODE: 24MATX01MD01**

Date	Topic
15.07.2025 to 19.07.2025	Introduction to Scheme and Syllabus of Examination, Numbers, H.C.F. and L.C.M. of Numbers
21.07.2025 to 26.07.2025	Decimal and Fractions, Simplification
28.07.2025 to 02.08.2025	Square roots and cube roots
04.08.2025 to 09.08.2025	Surds and indices
11.08.2025 to 16.08.2025	Problems on numbers
18.08.2025 to 23.08.2025	Average
25.08.2025 to 30.08.2025	Percentage
01.09.2025 to 06.09.2025	Profit and Loss, Test
08.09.2025 to 13.09.2025	Ratio and proportion
15.09.2025 to 20.09.2025	Problem on ages
22.09.2025 to 27.09.2025	Partnership
29.09.2025 to 04.10.2025	Time and work
06.10.2025 to 13.10.2025	Time and distance
23.10.2025 to 01.11.2025	Problems on trains, Test
03.11.2025 to 08.11.2025	Mixture problem
10.11.2025 to 18.11.2025	Problems based on Calendar and clock



Lesson Plan Odd Sem. (2025-26)**Class: B.A. 1st Sem.****Paper: Mathematical Programming in C and Numerical Methods (SEC)****CODE: 24MAT401SE01**

Date	Topic
15.07.2025 to 19.07.2025	Introduction to Scheme and Syllabus of Examination , Programmer's model of a computer
21.07.2025 to 26.07.2025	Algorithms, Flow charts
28.07.2025 to 02.08.2025	Data types, Operators and expressions, Input /Output functions.
04.08.2025 to 09.08.2025	Decisions control structure: Decision statements, Logical and conditional statements
11.08.2025 to 16.08.2025	Implementation of Loops, Switch Statement & Case control structures
18.08.2025 to 23.08.2025	Functions, Preprocessors and Arrays
25.08.2025 to 30.08.2025	Strings: Character Data Type, Standard String handling Functions, Arithmetic Operations on Characters
01.09.2025 to 06.09.2025	Structures: Definition, using Structures, Use of Structures in Arrays and Arrays in Structures, Test
08.09.2025 to 13.09.2025	Pointers, Data type, Pointers and Arrays, Pointers and Functions
15.09.2025 to 20.09.2025	Solution of Algebraic and Transcendental equations: Bisection method, Regula-Falsi method
22.09.2025 to 27.09.2025	Solution of Algebraic and Transcendental equations: Secant method, Newton-Raphson's method
29.09.2025 to 04.10.2025	Newton's iterative method for finding pth root of a number, Order of convergence of methods
06.10.2025 to 13.10.2025	Iterative method: Jacobi's method, Gauss-Seidal's method, Relaxation method
23.10.2025 to 01.11.2025	Simultaneous linear algebraic equations: Gauss-elimination method, Gauss-Jordan method, Test
03.11.2025 to 08.11.2025	Triangularization method (LU decomposition method), Crout's method
10.11.2025 to 18.11.2025	Cholesky Decomposition method



Lesson Plan Odd Sem. (2025-26)**Class: B.A. 3rd Sem.****Paper: Business Mathematics (Minor)****CODE: 25MAT402MI01**

Date	Topic
15.07.2025 to 19.07.2025	Introduction to Scheme and Syllabus of Examination, Linear Programming-Formulation of LPP: Graphical method of solution
21.07.2025 to 26.07.2025	Problems relating to two variables including the case of mixed constraints
28.07.2025 to 02.08.2025	Cases having no solution, multiple solutions, unbounded solution and redundant constraints
04.08.2025 to 09.08.2025	Simplex Method—Solution of problems up to three variables
11.08.2025 to 16.08.2025	Simplex Method—Cases of mixed constraints
18.08.2025 to 23.08.2025	Duality, Related Problems
25.08.2025 to 30.08.2025	Transportation Problem
01.09.2025 to 06.09.2025	Revision, Test
08.09.2025 to 13.09.2025	Compound Interest: Certain different types of interest rates
15.09.2025 to 20.09.2025	Concept of present value and amount of a sum
22.09.2025 to 27.09.2025	Annuities: Types of annuities; Present value and amount of an annuity
29.09.2025 to 04.10.2025	Problems related to Continuous compounding
06.10.2025 to 13.10.2025	Valuation of simple loans and debentures
23.10.2025 to 01.11.2025	Revision, Test
03.11.2025 to 08.11.2025	Problems relation to sinking funds
10.11.2025 to 18.11.2025	Revision of Syllabus



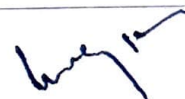
Lesson Plan Odd Sem. (2025-26)**Class: B.A. 3rd Sem.****Paper: Applicable Mathematics (MDC)****CODE: 25MATX03MD01**

Date	Topic
15.07.2025 to 19.07.2025	Introduction to Scheme and Syllabus of Examination, Theory of Sets: Meaning, elements
21.07.2025 to 26.07.2025	Types, presentation and equality of Sets
28.07.2025 to 02.08.2025	Union, Intersection, Complement and Difference of Sets
04.08.2025 to 09.08.2025	Venn Diagram, Cartesian Product of two Sets, Applications of Set Theory
11.08.2025 to 16.08.2025	Matrices and Determinants: Definition of a Matrix; Types of Matrices, Algebra of Matrices
18.08.2025 to 23.08.2025	Properties of determinants; Calculation of values of Determinants upto third order; adjoint of a Matrix
25.08.2025 to 30.08.2025	Elementary row and column operations; Finding inverse matrix through adjoint
01.09.2025 to 06.09.2025	Revision, Test
08.09.2025 to 13.09.2025	Solution of a system of Linear equations having unique Solution and involving not more than three variables
15.09.2025 to 20.09.2025	Compound Interest: Certain different types of interest rate
22.09.2025 to 27.09.2025	Concept of present value and amount of a sum
29.09.2025 to 04.10.2025	Annuities: Types of annuities
06.10.2025 to 13.10.2025	Present value and amount of an annuity
23.10.2025 to 01.11.2025	Revision, Test
03.11.2025 to 08.11.2025	Problems related to Continuous compounding
10.11.2025 to 18.11.2025	Revision of Syllabus



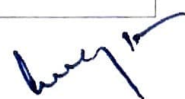
Lesson Plan Odd Sem. (2025-26)**Class: B.A./B.Sc. 5th Sem.****Paper: Numerical Analysis**

Date	Topic
15.07.2025 to 19.07.2025	Introduction of Syllabus and Scheme of Examination, Finite Difference Operators and their relation
21.07.2025 to 26.07.2025	Finding Missing Terms and Effect of error in difference tabular values, Introduction to Interpolation with Equal Intervals
28.07.2025 to 02.08.2025	Newton's Forward and Backward Interpolation Formula, Related Problems
04.08.2025 to 09.08.2025	Interpolation with Unequal Intervals: Divided Difference, Lagrange, Hermite Interpolation Formula, Test
11.08.2025 to 16.08.2025	Introduction to Central Differences: Derivation of Gauss Forward and Gauss Backward and Problems
18.08.2025 to 23.08.2025	Sterling Formula, Bessel's Interpolation Formula
25.08.2025 to 30.08.2025	Probability Distribution: Binomial, Normal and Poisson
01.09.2025 to 06.09.2025	Eigen Values: Power Method, Jacobi's Method, Test
08.09.2025 to 13.09.2025	Given's Method, House Holder's Method, QR-Method, Lanczo's Method
15.09.2025 to 20.09.2025	Numerical Differentiation, Related Problems, Assignment
22.09.2025 to 27.09.2025	Numerical Integration: Newton-Cote's Quadrature Formula, Trapezoidal Rule
29.09.2025 to 04.10.2025	Simpson's Rule: $1/3^{\text{rd}}$ and $3/8^{\text{th}}$, Problems
06.10.2025 to 13.10.2025	Chebycev Formula, Gauss Quadrature Formula, Problems, Test
23.10.2025 to 01.11.2025	Introduction to Numerical Solution of Ordinary Differential Equations, Revision, Test
03.11.2025 to 08.11.2025	Single Step Methods: Picard's Method, Taylor Series Method Euler's and Runge-Kutta Method
10.11.2025 to 18.11.2025	Multiple-Step Methods: Predictor-Corrector Method, Modified Euler's Method, Milne-Simpson's Method, Assignment



Lesson Plan Odd Sem. (2025-26)**Class: B.A./B.Sc. 5th Sem.****Paper: Groups and Rings**

Date	Topic
15.07.2025 to 19.07.2025	Introduction of Syllabus and Scheme of Examination, Definition of Group with examples, General properties of group, Order of an element of a group
21.07.2025 to 26.07.2025	Definition of subgroup with examples, Various criteria for subgroups, Cyclic groups
28.07.2025 to 02.08.2025	Euler's function and its relation with generator of a group, Cosets , Left and Right cosets, Index of a subgroup
04.08.2025 to 09.08.2025	Coset decomposition, Lagrange's theorem and its consequences, Normal subgroups, Simple groups
11.08.2025 to 16.08.2025	Quotient groups, Homomorphism, Isomorphism
18.08.2025 to 23.08.2025	Automorphism, Inner-automorphism of a group, Automorphism of cyclic groups
25.08.2025 to 30.08.2025	Centralizer and Normalizer, Characteristics subgroup, Derived group of a group, Permutation groups
01.09.2025 to 06.09.2025	Even and Odd permutations, Alternating groups, Cayley's theorem, Test
08.09.2025 to 13.09.2025	Definition of Ring with examples, Integral domain and Fields
15.09.2025 to 20.09.2025	Subrings, Characteristics of a ring, Ideals
22.09.2025 to 27.09.2025	Principal ideals, Maximal ideals, Quotient rings
29.09.2025 to 04.10.2025	Homomorphism and Isomorphism of rings, Imbedding of rings
06.10.2025 to 13.10.2025	Field of quotient of an integral domain, Euclidean rings, Prime element and Irreducible element
23.10.2025 to 01.11.2025	Polynomial rings, Polynomial over the rational field, Polynomial rings over commutative rings, Test
03.11.2025 to 08.11.2025	Unique Factorization Domain, Primitive and Irreducible polynomial, Gauss's lemma
10.11.2025 to 18.11.2025	Field of Quotient of a UFD, Eisenstein's irreducibility criterion, Sessional Exam-II



Lesson Plan Odd Sem. (2025-26)**Class: B.A./B.Sc. 5th Sem.****Paper: Real Analysis**

Date	Topic
15.07.2025 to 19.07.2025	Introduction of Syllabus and Scheme of Examination, Riemann integral, Integrability of continuous and monotonic functions
21.07.2025 to 26.07.2025	Fundamental theorem of integral calculus
28.07.2025 to 02.08.2025	Mean value theorems of integral calculus, Improper integrals and their convergence
04.08.2025 to 09.08.2025	Comparison tests, Abel's and Dirichlet's tests, Frullani's integral
11.08.2025 to 16.08.2025	Integral as a function of a parameter, Continuity
18.08.2025 to 23.08.2025	Differentiability and Integrability of an integral of a function of a parameter
25.08.2025 to 30.08.2025	Definition and examples of metric spaces, neighborhoods, Limit points, interior points, open and closed sets,
01.09.2025 to 06.09.2025	Closure and interior, boundary points, Test
08.09.2025 to 13.09.2025	Subspace of a metric space, equivalent metrics, Cauchy sequences, completeness
15.09.2025 to 20.09.2025	Cantor's intersection theorem, Baire's category theorem, contraction Principle
22.09.2025 to 27.09.2025	Continuous functions, Uniform continuity
29.09.2025 to 04.10.2025	Compactness for metric spaces, sequential compactness, Bolzano-Weierstrass property
06.10.2025 to 13.10.2025	Total boundedness, Finite intersection property, Continuity in relation with compactness
23.10.2025 to 01.11.2025	Connectedness, components, Test
03.11.2025 to 08.11.2025	Continuity in relation with connectedness
10.11.2025 to 18.11.2025	Revision of Syllabus

