

LESSON PLAN (EVEN SEM. 2024-25)

Name of the Associate Professor: Mr. Satish Kumar

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

Subject: Calculus

Date	Topic
01.02.2025 to 08.02.2025	Introduction of the Syllabus, Scheme of Examination, ϵ - δ definition of the limit of a function, Basic Properties of limits
10.02.2025 to 15.02.2025	Continuous Functions and Classification of discontinuities, Problems related to Continuity of functions, ϵ - δ definition of Continuity
17.02.2025 to 22.02.2025	Differentiability of Functions and Problems based on it, Test
24.02.2025 to 01.03.2025	Successive Differentiation and Standard Formulas for n^{th} derivative of functions
03.03.2025 to 08.03.2024	Leibnitz Theorem and Problems, Revision, Sessional Exam I.
10.03.2025 to 15.03.2024	Maclaurin and Taylor Series expansions, Test
17.03.2025 to 22.03.2024	Asymptotes parallel to Co-ordinate axes, Oblique Asymptotes
24.03.2025 to 29.03.2025	Intersection of Curve and its Asymptotes, Asymptotes in Polar Co-ordinates. Revision
31.03.2025 to 05.04.2025	Introduction to Curvature, Assignment
07.04.2025 to 12.04.2025	Radius of Curvature for Cartesian, Parametric and Polar Curves
14.04.2025 to 19.04.2025	Pedal Equation, Newton's Method, Discussion, Sessional Exam II.
21.04.2025 to 26.04.2025	Centre of Curvature, Chord of Curvature, Evolutes, Test
28.04.2025 to 03.05.2025	Singular Points, Multiple Points, Cusps and its types, Nodes and Conjugate Points
05.05.2025 to 10.05.2025	Points of Inflexion, Curve Tracing: Cartesian, Parametric and Polar, Test
12.05.2025 to 17.05.2025	Reduction Formulae, Rectification, Assignment
19.05.2025 to 24.05.2025	Quadrature, Revision
26.05.2025 to 31.05.2025	Volumes and Surfaces of solids of revolution, Revision


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LESSON PLAN (EVEN SEM. 2024-25)

Name of the Associate Professor: Mr. Satish Kumar

Class: B.A. 1st Year SEC

Subject: Numerical Analysis

Date	Topic
01.02.2025 to 08.02.2025	Introduction of Syllabus and Scheme of Examination, Finite Difference Operators and their relation
10.02.2025 to 15.02.2025	Finding Missing Terms and Effect of error in difference tabular values, Introduction to Interpolation with Equal Intervals
17.02.2025 to 22.02.2025	Newton's Forward and Backward Interpolation Formula, Related Problems
24.02.2025 to 01.03.2025	Interpolation with Unequal Intervals: Divided Difference, Lagrange, Hermite Interpolation Formula,
03.03.2025 to 08.03.2024	Introduction to Central Differences: Derivation of Gauss Forward Formula, Sessional Exam I
10.03.2025 to 15.03.2024	Gauss Backward Formula and Problems
17.03.2025 to 22.03.2024	Sterling Formula, Bessel's Interpolation Formula
24.03.2025 to 29.03.2025	Eigen Values: Power Method, Jacobi's Method, Test
31.03.2025 to 05.04.2025	Given's Method, House Holder's Method, QR-Method, Lanczo's Method
07.04.2025 to 12.04.2025	Numerical Differentiation, Related Problems, Assignment
14.04.2025 to 19.04.2025	Numerical Integration: Newton-Cote's Quadrature Formula, Trapezoidal Rule, Sessional Exam II
21.04.2025 to 26.04.2025	Simpson's Rule: $1/3^{\text{rd}}$ and $3/8^{\text{th}}$, Problems
28.04.2025 to 03.05.2025	Chebychev Formula, Gauss Quadrature Formula, Problems, Test
05.05.2025 to 10.05.2025	Introduction to Numerical Solution of Ordinary Differential Equations, Revision
12.05.2025 to 17.05.2025	Single Step Methods: Picard's Method, Taylor Series Method Euler's and Runge-Kutta Method
19.05.2025 to 24.05.2025	Multiple-Step Methods: Predictor-Corrector Method, Modified Euler's Method, Milne-Simpson's Method, Assignment
26.05.2025 to 31.05.2025	Revision


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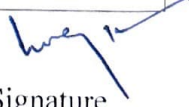
LESSON PLAN (EVEN SEM. 2024-25)

Name of the Associate Professor Mr. Satish Kumar

Class: B.Sc./B.A. 2nd Year

Subject: Sequence and Series

Sr. No.	Date/Period	Topics
1.	07.01.2025 to 11.01.2025	Boundedness of the set of real numbers, least upper bound, greatest lower bound of a set neighborhood
2.	13.01.2025 to 18.01.2025	Interior points isolated points, limit points, open sets, close sets, interior of a set
3.	20.01.2025 to 25.01.2025	Closure of a set in real numbers and their properties
4.	27.01.2025 to 01.02.2025	Bolzano-Weierstrass theorem. Open cover. Compact sets and Heine Borel Theorem
5.	03.02.2025 to 08.02.2025	Sequence: Real sequence and their convergence, theorems of limits of sequence, Sessional Exam I
6.	10.02.2025 to 15.02.2025	Bounded and monotonic sequence Cauchy's sequence
7.	17.02.2025 to 22.02.2025	Cauchy general principle of convergence, subsequences, subsequential limits
8.	24.02.2025 to 01.03.2025	Infinite Series: convergence and divergence of infinite series, comparison tests of positive terms infinite series
9.	03.03.2025 to 08.03.2024	Cauchy's general principle of convergence of series, convergence and divergence of geometrical series. hyper harmonic series or p series
10.	10.03.2025 to 15.03.2024	Infinite series: D' Alembert Ratio test, logarithm test, de Morgan and test, Bertrand's Test
11.	17.03.2025 to 22.03.2024	Cauchy's nth root test, gauss test, Cauchy integral test, Cauchy's condensation test
12.	24.03.2025 to 29.03.2025	Alternating series: Leibnitz's test absolute and conditional convergence arbitrary series, Able's Test, Dirichlet's Test, Insert and removal of parenthesis
13.	31.03.2025 to 05.04.2025	Rearrangement of terms in a series, Dirichlet's theorem, Riemann's Rearrangement theorem. Pringsheim's theorem (statement only)
14.	07.04.2025 to 12.04.2025	Multiplication of series
15.	14.04.2025 to 19.04.2025	Cauchy product of series, (definition and examples only), Sessional Exam II
16.	21.04.2025 to 26.04.2025	Convergence and absolute convergence of infinite products
17.	28.04.2025 to 05.05.2025	Convergence and absolute convergence of infinite products Revision


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LESSON PLAN (EVEN SEM. 2024-25)

Name of the Associate Professor: Mr. Satish Kumar

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

Subject: Real and Complex Analysis

Date	Topic
07.01.2025 to 11.01.2025	Jacobians, Beta and Gama functions and their applications.
13.01.2025 to 18.01.2025	Double and Triple integrals
20.01.2025 to 25.01.2025	Dirichlet's integrals, change of order of integration in double integrals.
27.01.2025 to 01.02.2025	Fourier's series: Fourier expansion of piecewise monotonic functions.
03.02.2025 to 08.02.2025	Properties of Fourier Coefficients, Dirichlet's conditions, Sessional Exam I.
10.02.2025 to 15.02.2025	Parseval's identity for Fourier series, Fourier series for even and odd functions.
17.02.2025 to 22.02.2025	Half range series, Change of Intervals. Test
24.02.2025 to 01.03.2025	Extended Complex Plane, Stereographic projection of complex numbers.
03.03.2025 to 08.03.2024	Continuity and differentiability of complex functions.
10.03.2025 to 15.03.2024	Analytic functions, Cauchy-Riemann equations. Harmonic functions.
17.03.2025 to 22.03.2024	Mappings by elementary functions: Translation, rotation.
24.03.2025 to 29.03.2025	Magnification and Inversion. Conformal Mappings.
31.03.2025 to 05.04.2025	Mobius transformations & its applications. Test
07.04.2025 to 12.04.2025	Fixed points, Cross ratio, Inverse Points and critical mappings.
14.04.2025 to 19.04.2025	Revision, Sessional Exam II.
21.04.2025 to 26.04.2025	Revision.
28.04.2025 to 05.05.2025	Revision.


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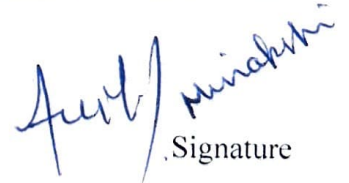
LESSON PLAN (EVEN SEM. 2024-25)

Name of the Assistant Professor: Dr. Anil Kumar, Dr.Minakshi

Class: B.A. 1st Year MDC

Subject: Mathematical Reasoning

Date	Topic
01.02.2025 to 08.02.2025	Introduction to Scheme and Syllabus, Analogy
10.02.2025 to 15.02.2025	Classification, Series Completion
17.02.2025 to 22.02.2025	Coding-Decoding, Blood Relation
24.02.2025 to 01.03.2025	Puzzle Test, Sequential output Tracing
03.03.2025 to 08.03.2024	Logical Venn Diagram, Sessional Exam I
10.03.2025 to 15.03.2024	Alphabet Test
17.03.2025 to 22.03.2024	Number, Ranking and Time sequence Test
24.03.2025 to 29.03.2025	Mathematical Operation
31.03.2025 to 05.04.2025	Logical Sequence and Word
07.04.2025 to 12.04.2025	Arithmetical Reasoning
14.04.2025 to 19.04.2025	Revision, Sessional Exam II
21.04.2025 to 26.04.2025	Data Interpolation and Reasoning: Tabulation
28.04.2025 to 03.05.2025	Bar Graphs, Line Graphs
05.05.2025 to 10.05.2025	Pie Chart, Venn Diagrams
12.05.2025 to 17.05.2025	Analytical Reasoning
19.05.2025 to 24.05.2025	Mirror Images
26.05.2025 to 31.05.2025	Revision


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LESSON PLAN (EVEN SEM. 2024-25)

Teacher- Dr. Anil Kumar, Assistant Professor, Mathematics

Subject- Mathematics, Class- B.Sc./B.A. 4th Semester, Paper- Special Functions and Integral Transforms

Sr. No.	Date/Period	Topics
1.	07.01.2025 to 11.01.2025	Power Series, Radius and Interval of Convergence, Ordinary and Singular Point of Differential Equations.
2.	13.01.2025 to 18.01.2025	Power Series Solution for Ordinary Point of a Differential Equation, Power Series Solution for Regular Singular Point.
3.	20.01.2025 to 25.01.2025	Problems Based on Frobenius Method when 1. The Roots of an Indicial Equations are Distinct and do not differ by an Integer. 2. The Roots of an Indicial Equations are Equal.
4.	27.01.2025 to 01.02.2025	Problems Based on Frobenius Method when 1. The Roots of an Indicial Equations are Unequal and Differ by an Integer making Coefficient of y Infinite. 2. The Roots of an Indicial Equations are Unequal and Differ by an Integer making Coefficient Indeterminate. Assignment I
5.	03.02.2025 to 08.02.2025	Properties of Beta and Gamma Functions, Solution of Bessel's Equation, Bessel's Function and Its Properties.
6.	10.02.2025 to 15.02.2025	Recurrence relations for Bessel's functions, Generating Function for $J_n(x)$. Representation of $J_n(x)$ as Integral. Problems Based on Recurrence Relation and Generating Function.
7.	17.02.2025 to 22.02.2025	Equation Reducible to Bessel's Equations, Orthogonality of Bessel's Function, Class Test I
8.	24.02.2025 to 01.03.2025	Legendre and Hermite Differential Equations, Legendre's and Hermite's Functions and their Properties, Recurrence Relations and Generating Functions.
9.	03.03.2025 to 08.03.2024	Orthogonality of Legendre's and Hermite's Polynomials, Rodrigue's Formula, Laplace Integral Representation of Legendre Polynomial, Sessional Exam I
10.	10.03.2025 to 15.03.2024	Laplace Transforms, Existence Theorem and Linearity of Laplace Transforms, Shifting Theorems, Laplace Transforms of Derivative and Integrals Differentiations, Integral of Laplace Transforms.
11.	17.03.2025 to 22.03.2024	Convolution Theorem, Inverse Laplace Transforms, Inverse Laplace Transforms of Derivatives and Integrals, Solution of Ordinary Differential Equations using Laplace Transform, Assignment II
12.	24.03.2025 to 29.03.2025	Fourier Transforms, Linear Property, Shifting Theorem, Modulation & Convolution Theorems, Fourier Transform of Derivatives, Relation between Fourier and Laplace Transform.
13.	31.03.2025 to 05.04.2025	Parseval's Identity for Fourier Transform, Solution of Differential Equations using Fourier Transforms.
14.	07.04.2025 to 12.04.2025	Miscellaneous Problems Based on Laplace and Fourier Transforms, Class Test II
15.	14.04.2025 to 19.04.2025	Sessional Exam II, Revision of Syllabus
16.	21.04.2025 to 26.04.2025	Revision of Syllabus
17.	28.04.2025 to 05.05.2025	Revision of Syllabus

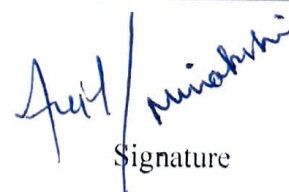
Anil Kumar
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LESSON PLAN (EVEN SEM. 2024-25)

Teacher- Dr. Anil Kumar, Assistant Professor, Mathematics

Subject- Mathematics, Class- B.Sc./B.A. 6th Semester, Paper – Linear Algebra

Sr. No.	Date/Period	Topics
1.	07.01.2025 to 11.01.2025	Vector Spaces, Subspaces, Linear Sum and Direct Sum of Subspaces
2.	13.01.2025 to 18.01.2025	Linear Span, Linearly Independent and Dependent Subset of a Vector Space
3.	20.01.2025 to 25.01.2025	Finitely Generated Vector Space, Existence Theorem for Basis of a Finitely Generated Vector Space, Finite Dimensional Vector Spaces
4.	27.01.2025 to 01.02.2025	Invariance of the Number of Elements of Basis Sets, Dimensions, Identical Spaces, Quotient Space and its Dimension, Assignment I
5.	03.02.2025 to 08.02.2025	Homomorphism and Isomorphism of Vector Spaces, Linear Transformation and Linear Forms on Vector Spaces
6.	10.02.2025 to 15.02.2025	Vector Space of all the Linear Transformations, Dual Spaces, Bidual Spaces, Annihilator of Subspaces of Finite Dimensional Vector Spaces
7.	17.02.2025 to 22.02.2025	Null Space, Range Space of a Linear Transformation, Rank and Nullity Theorem
8.	24.02.2025 to 01.03.2025	Algebra of Linear Transformation, Minimal Polynomial of a Linear Transformation
9.	03.03.2025 to 08.03.2024	Singular and Non-Singular Linear Transformations, Matrix of a Linear Transformation, Sessional Exam I
10.	10.03.2025 to 15.03.2024	Change of Basis, Eigen Values and Eigen Vectors of Linear Transformations
11.	17.03.2025 to 22.03.2024	Inner Product Spaces, Cauchy – Schwarz Inequality, Assignment II
12.	24.03.2025 to 29.03.2025	Orthogonal Vectors, Orthogonal Complement, Orthogonal Sets and Basis
13.	31.03.2025 to 05.04.2025	Bessel's Inequality for Finite Dimensional Vector Spaces, Gram-Schmidt Orthogonalization Process
14.	07.04.2025 to 12.04.2025	Adjoint of a Linear Transformation and its Properties, Unitary Linear Transformation
15.	14.04.2025 to 19.04.2025	Sessional Exam II , Revision of Syllabus
16.	21.04.2025 to 26.04.2025	Revision of Syllabus
17.	28.04.2025 to 05.05.2025	Revision of Syllabus


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LESSON PLAN (EVEN SEM. 2024-25)

Name of the Assistant Professor: Dr. Minakshi

Class: B.Sc./B.A. 2nd Year

Subject: Programming in C and Numerical Methods

Date	Topic
07.01.2025 to 11.01.2025	Computer: A general Introduction, Algorithms and Flowcharts: Definition, Advantages, Disadvantages, Examples
13.01.2025 to 18.01.2025	Introduction to C, Its Importance and Related Terms
20.01.2025 to 25.01.2025	Data Types, Variable Declaration, Statement, A Typical C Program, Test
27.01.2025 to 01.02.2025	Operators and Expressions, Precedence of various operators
03.02.2025 to 08.02.2025	Introduction to Numerical Methods, Bisection Method and Related Problems, Sessional Exam I
10.02.2025 to 15.02.2025	Regula Falsi Method, Newton Raphson Method, Assignment
17.02.2025 to 22.02.2025	Decision Control Structures, If-else Statement, Nested If-else Statement, Computer Programs
24.02.2025 to 01.03.2025	Else-If ladder, Switch Statement, Test
03.03.2025 to 08.03.2024	Introduction to Loops, do-while Statement, for Loop
10.03.2025 to 15.03.2024	Programs related to loops
17.03.2025 to 22.03.2024	Introduction to Functions, Local and Global Variables, C-Preprocessor, Introduction to Arrays, Their Types, Test
24.03.2025 to 29.03.2025	Introduction to Simultaneous Linear Algebraic Equations, Gauss Elimination Method, Gauss Jordan Method, Related Problems
31.03.2025 to 05.04.2025	Crout's Method, Square Root Method, Iterative Method, Assignment
07.04.2025 to 12.04.2025	Structures: Definition, Using Structure in a Program
14.04.2025 to 19.04.2025	Pointers: Pointer Data Type, Pointers and Arrays, Pointers and Functions, Sessional Exam II
21.04.2025 to 26.04.2025	Triangularization Method, LU Decomposition Method, Cholesky Decomposition Method, Test
28.04.2025 to 05.05.2025	Jacobi's Method, Gauss-Seidal Method, Relaxation Method, Revision


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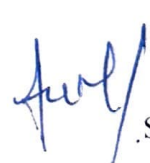
LESSON PLAN (EVEN SEM. 2024-25)

Name of the Assistant Professor: Dr. Minakshi

Class: B.Sc. 3rd Year

Subject: Dynamics

Date	Topic
07.01.2025 to 11.01.2025	Preliminaries related to Motion of a Particle, Velocity, Acceleration, Angular Velocity, Angular Acceleration, Relation between Linear and Angular Velocity
13.01.2025 to 18.01.2025	Radial and Transverse Velocity, Radial and Transverse Acceleration, Related Problems
20.01.2025 to 25.01.2025	Tangential and Normal Components of Velocity and Acceleration of a Particle, Related Problems
27.01.2025 to 01.02.2025	Simple Harmonic Motion, Related Problems, Test
03.02.2025 to 08.02.2025	Elastic Strings: Hooke's Law, Theorems and Related Problems
10.02.2025 to 15.02.2025	Newton's Laws of Motion: Equations of Motion, Motion of a body on a Horizontal Plane
17.02.2025 to 22.02.2025	Vertically Upward and Downward Motion, Test, Assignment
24.02.2025 to 01.03.2025	Motion of two bodies connected by a String, Motion on a smooth and rough horizontal plane, Atwood's Machine, Related Problems
03.03.2025 to 08.03.2024	Work: Definition, Units, Related Problems, Sessional Exam I
10.03.2025 to 15.03.2024	Power, Related Problems, Test
17.03.2025 to 22.03.2024	Energy, Principle of Work and Energy, Related Problems
24.03.2025 to 29.03.2025	Motion of a Particle on a smooth curve in a vertical plane, Inside and Outside of a vertical circle, Cycloidal Motion
31.03.2025 to 05.04.2025	Motion of a Projectile, Related Terms and Problems
07.04.2025 to 12.04.2025	Central Force and Central Orbit, Related Theorems and Expressions, Areal Velocity, APSE and Apsidal Distances, Velocity from Infinity
14.04.2025 to 19.04.2025	Kepler's Law of Planetary Motion, Motion under different conditions, Related Problems, Sessional Exam II
21.04.2025 to 26.04.2025	Motion of a Particle in three dimensions in Spherical and Cylindrical Polar Coordinates, Related Problems
28.04.2025 to 05.05.2025	Revision, Test

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