

Lesson Plan for Session 2023-2024

Teacher- Dr. Anil Kumar, Assistant Professor, Mathematics

Subject- Mathematics, Class- B.Sc./B.A. 2nd Semester, Paper- Vector Calculus

Sr. No.	Date/Period	Topics
1.	01.01.2024 to 06.01.2024	Scalar and Vector Product of Three Vectors
2.	08.01.2024 to 13.01.2024	Product of Four Vectors, Reciprocal Vectors and Vector Differentiation
3.	15.01.2024 to 21.01.2024	Scalar and Vector Valued Point Functions, Derivative Along a Curve
4.	22.01.2024 to 27.01.2024	Directional Derivatives, Assignment I
5.	29.01.2024 to 03.02.2024	Gradient of a Scalar Point Function, Geometrical Interpretation of $\text{Grad } \phi$, Character of Gradient as a Point Function.
6.	05.02.2024 to 10.02.2024	Divergence and Curl of Vector Point Function, Characters of $\text{Div } \vec{f}$ and $\text{Curl } \vec{f}$ as Point Function, Examples
7.	12.02.2024 to 17.02.2024	Gradient, Divergence and Curl of Sums and Product and their related Vector Identities. Laplacian Operator, Class Test I
8.	19.02.2024 to 24.02.2024	Orthogonal Curvilinear Co-ordinates, Conditions for Orthogonality Fundamental triad of Mutually Orthogonal Unit Vectors.
9.	26.02.2024 to 02.03.2024	Gradient, Divergence in terms of Orthogonal Curvilinear Co-ordinates.
10.	04.03.2024 to 09.03.2024	Curl and Laplacian Operators in terms of Orthogonal Curvilinear Co-ordinates.
11.	11.03.2024 to 16.03.2024	Cylindrical Co-ordinates and Spherical Co-ordinates, Assignment II
12.	18.03.2024 to 23.03.2024	Vector Integration, Line Integral
13.	25.03.2024 to 30.03.2024	Surface Integral, Volume integral
14.	01.04.2024 to 06.04.2024	Theorems of Gauss, Green & Stokes and Problems Based on these Theorems, Class Test II
15.	08.04.2024 to 13.04.2024	Revision of Syllabus
16.	15.04.2024 to 20.04.2024	Revision of Syllabus
17.	22.04.2024 to 30.04.2024	Revision of Syllabus




Signature of Teacher

Lesson Plan for Session 2023-2024

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.	01.01.2024 to 06.01.2024	Power Series, Radius and Interval of Convergence, Ordinary and Singular Point of Differential Equations.
2.	08.01.2024 to 13.01.2024	Power Series Solution for Ordinary Point of a Differential Equation, Power Series Solution for Regular Singular Point.
3.	15.01.2024 to 21.01.2024	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.	22.01.2024 to 27.01.2024	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.	29.01.2024 to 03.02.2024	Properties of Beta and Gamma Functions, Solution of Bessel's Equation, Bessel's Function and Its Properties.
6.	05.02.2024 to 10.02.2024	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.	12.02.2024 to 17.02.2024	Equation Reducible to Bessel's Equations, Orthogonality of Bessel's Function, Class Test I
8.	19.02.2024 to 24.02.2024	Legendre and Hermite Differential Equations, Legendre's and Hermite's Functions and their Properties, Recurrence Relations and Generating Functions.
9.	26.02.2024 to 02.03.2024	Orthogonality of Legendre's and Hermite's Polynomials, Rodrigue's Formula, Laplace Integral Representation of Legendre Polynomial.
10.	04.03.2024 to 09.03.2024	Laplace Transforms, Existence Theorem and Linearity of Laplace Transforms, Shifting Theorems, Laplace Transforms of Derivative and Integrals Differentiations, Integral of Laplace Transforms.
11.	11.03.2024 to 16.03.2024	Convolution Theorem, Inverse Laplace Transforms, Inverse Laplace Transforms of Derivatives and Integrals, Solution of Ordinary Differential Equations using Laplace Transform, Assignment II
12.	18.03.2024 to 23.03.2024	Fourier Transforms, Linear Property, Shifting Theorem, Modulation & Convolution Theorems, Fourier Transform of Derivatives, Relation between Fourier and Laplace Transform.
13.	25.03.2024 to 30.03.2024	Parseval's Identity for Fourier Transform, Solution of Differential Equations using Fourier Transforms.
14.	01.04.2024 to 06.04.2024	Miscellaneous Problems Based on Laplace and Fourier Transforms, Class Test II
15.	08.04.2024 to 13.04.2024	Revision of Syllabus
16.	15.04.2024 to 20.04.2024	Revision of Syllabus
17.	22.04.2024 to 30.04.2024	Revision of Syllabus


Signature of Teacher

Lesson Plan for Session 2023-2024

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.	01.01.2024 to 06.01.2024	Vector Spaces, Subspaces, Linear Sum and Direct Sum of Subspaces
2.	08.01.2024 to 13.01.2024	Linear Span, Linearly Independent and Dependent Subset of a Vector Space
3.	15.01.2024 to 21.01.2024	Finitely Generated Vector Space, Existence Theorem for Basis of a Finitely Generated Vector Space, Finite Dimensional Vector Spaces
4.	22.01.2024 to 27.01.2024	Invariance of the Number of Elements of Basis Sets, Dimensions, Identical Spaces, Quotient Space and its Dimension, Assignment I
5.	29.01.2024 to 03.02.2024	Homomorphism and Isomorphism of Vector Spaces, Linear Transformation and Linear Forms on Vector Spaces
6.	05.02.2024 to 10.02.2024	Vector Space of all the Linear Transformations, Dual Spaces, Bidual Spaces, Annihilator of Subspaces of Finite Dimensional Vector Spaces
7.	12.02.2024 to 17.02.2024	Null Space, Range Space of a Linear Transformation, Rank and Nullity Theorem, Class Test I
8.	19.02.2024 to 24.02.2024	Algebra of Linear Transformation, Minimal Polynomial of a Linear Transformation
9.	26.02.2024 to 02.03.2024	Singular and Non-Singular Linear Transformations, Matrix of a Linear Transformation
10.	04.03.2024 to 09.03.2024	Change of Basis, Eigen Values and Eigen Vectors of Linear Transformations
11.	11.03.2024 to 16.03.2024	Inner Product Spaces, Cauchy – Schwarz Inequality, Assignment II
12.	18.03.2024 to 23.03.2024	Orthogonal Vectors, Orthogonal Complement, Orthogonal Sets and Basis
13.	25.03.2024 to 30.03.2024	Bessel's Inequality for Finite Dimensional Vector Spaces, Gram-Schmidt Orthogonalization Process
14.	01.04.2024 to 06.04.2024	Adjoint of a Linear Transformation and its Properties, Unitary Linear Transformation, Class Test II
15.	08.04.2024 to 13.04.2024	Revision of Syllabus
16.	15.04.2024 to 20.04.2024	Revision of Syllabus
17.	22.04.2024 to 30.04.2024	Revision of Syllabus


Signature of Teacher

LESSON PLAN (EVEN SEM. 2023-24)

Name of the Assistant/Associate Professor: Mr. Satish, Dr. Anil Kumar, Dr. Minakshi

Class: B.Com 1st Year

Subject: BUSINESS MATHEMATICS

Date	Topic
01.01.2024 to 06.01.2024	Introduction of Syllabus and Scheme of Examination, Matrices: Definition, Types, Algebra
08.01.2024 to 13.01.2024	Determinants: Definition, How to find determinant of matrices of different orders, Adjoint of Matrix
15.01.2024 to 21.01.2024	Elementary row and column operations, Inverse of a matrix, Test
22.01.2024 to 27.01.2024	Differentiation: Using First Principal, General Theorems, Product of two functions, Quotient of two functions
29.01.2024 to 03.02.2024	Chain Rule, Differentiation of Logarithmic, Exponential, Implicit and Parametric Functions
05.02.2024 to 10.02.2024	Derivatives of Higher Order, Application of Derivatives, Test
12.02.2024 to 17.02.2024	Introduction of Simple and Compound Interest, Related Problems. Assignment
19.02.2024 to 24.02.2024	Determination of Compound Interest for various periods: Annually, Half-yearly, Quarterly, Continuous compounding of interest, Test
26.02.2024 to 02.03.2024	Annuities: Definition, Types, Formulas, Related Problems
04.03.2024 to 09.03.2024	Present value of an Annuity for different cases
11.03.2024 to 16.03.2024	Solution of Practical problems related to Annuities, Related Problems
18.03.2024 to 23.03.2024	Ratio: Definition, Related terms, Their Comparison, Types, Test
25.03.2024 to 30.03.2024	Proportion: Definition, Types, Properties, Related Problems
01.04.2024 to 06.04.2024	Addendo Theorem and Related problems, Assignment
08.04.2024 to 13.04.2024	Percentage and Related problems
15.04.2024 to 20.04.2024	Profit and Loss, Related problems
22.04.2024 to 30.04.2024	Revision, Test


Signature

