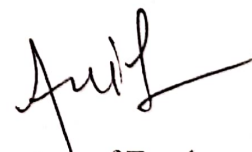


Lesson Plan for Session 2022-2023

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.	16.01.2023 to 21/01/2023	Scalar and Vector Product of Three Vectors
2.	23/01/2023 to 28/01/2023	Product of Four Vectors, Reciprocal Vectors and Vector Differentiation
3.	30/01/2023 to 04/02/2023	Scalar and Vector Valued Point Functions, Derivative Along a Curve
4.	06/02/2023 to 11/02/2023	Directional Derivatives, Assignment I
5.	13/02/2023 to 18/02/2023	Gradient of a Scalar Point Function, Geometrical Interpretation of $\text{Grad } \Phi$, Character of Gradient as a Point Function.
6.	20/02/2023 to 25/02/2023	Divergence and Curl of Vector Point Function, Characters of $\text{Div } \vec{f}$ and $\text{Curl } \vec{f}$ as Point Function, Examples
7.	27/02/2023 to 04/03/2023	Gradient, Divergence and Curl of Sums and Product and their related Vector Identities. Laplacian Operator, Class Test I
8.	13/03/2023 to 18/03/2023	Orthogonal Curvilinear Co-ordinates, Conditions for Orthogonality Fundamental triad of Mutually Orthogonal Unit Vectors.
9.	20/03/2023 to 25/03/2023	Gradient, Divergence in terms of Orthogonal Curvilinear Co-ordinates.
10.	27/03/2023 to 01/04/2023	Curl and Laplacian Operators in terms of Orthogonal Curvilinear Co-ordinates.
11.	03/04/2023 to 08/04/2023	Cylindrical Co-ordinates and Spherical Co-ordinates, Assignment II
12.	10/04/2023 to 15/04/2023	Vector Integration, Line Integral
13.	17/04/2023 to 22/04/2023	Surface Integral, Volume integral
14.	24/04/2023 to 29/04/2023	Theorems of Gauss, Green & Stokes and Problems Based on these Theorems, Class Test II
15.	01/05/2023 to 06/05/2023	Revision of Syllabus
16.	08/05/2023 to 16/05/2023	Revision of Syllabus



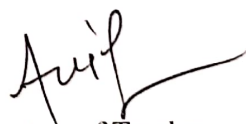
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Lesson Plan for Session 2022-2023

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.	16.01.2023 to 21/01/2023	Power Series, Radius and Interval of Convergence, Ordinary and Singular Point of Differential Equations.
2.	23/01/2023 to 28/01/2023	Power Series Solution for Ordinary Point of a Differential Equation, Power Series Solution for Regular Singular Point.
3.	30/01/2023 to 04/02/2023	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.	06/02/2023 to 11/02/2023	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.	13/02/2023 to 18/02/2023	Properties of Beta and Gamma Functions, Solution of Bessel's Equation, Bessel's Function and Its Properties.
6.	20/02/2023 to 25/02/2023	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.	27/02/2023 to 04/03/2023	Equation Reducible to Bessel's Equations, Orthogonality of Bessel's Function, Class Test I
8.	13/03/2023 to 18/03/2023	Legendre and Hermite Differential Equations, Legendre's and Hermite's Functions and their Properties, Recurrence Relations and Generating Functions.
9.	20/03/2023 to 25/03/2023	Orthogonality of Legendre's and Hermite's Polynomials, Rodrigue's Formula, Laplace Integral Representation of Legendre Polynomial.
10.	27/03/2023 to 01/04/2023	Laplace Transforms, Existence Theorem and Linearity of Laplace Transforms, Shifting Theorems, Laplace Transforms of Derivative and Integrals Differentiations, Integral of Laplace Transforms.
11.	03/04/2023 to 08/04/2023	Convolution Theorem, Inverse Laplace Transforms, Inverse Laplace Transforms of Derivatives and Integrals, Solution of Ordinary Differential Equations using Laplace Transform. Assignment II
12.	10/04/2023 to 15/04/2023	Fourier Transforms. Linear Property, Shifting Theorem, Modulation & Convolution Theorems, Fourier Transform of Derivatives, Relation between Fourier and Laplace Transform.
13.	17/04/2023 to 22/04/2023	Parseval's Identity for Fourier Transform, Solution of Differential Equations using Fourier Transforms.
14.	24/04/2023 to 29/04/2023	Miscellaneous Problems Based on Laplace and Fourier Transforms, Class Test II
15.	01/05/2023 to 06/05/2023	Revision of Syllabus
16.	08/05/2023 to 16/05/2023	Revision of Syllabus

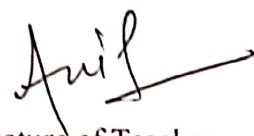

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Lesson Plan for Session 2022-2023

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.	16/01/2023 to 21/01/2023	Vector Spaces, Subspaces, Linear Sum and Direct Sum of Subspaces
2.	23/01/2023 to 28/01/2023	Linear Span, Linearly Independent and Dependent Subset of a Vector Space
3.	30/01/2023 to 04/02/2023	Finitely Generated Vector Space, Existence Theorem for Basis of a Finitely Generated Vector Space, Finite Dimensional Vector Spaces
4.	06/02/2023 to 11/02/2023	Invariance of the Number of Elements of Basis Sets, Dimensions, Identical Spaces, Quotient Space and its Dimension, Assignment I
5.	13/02/2023 to 18/02/2023	Homomorphism and Isomorphism of Vector Spaces, Linear Transformation and Linear Forms on Vector Spaces
6.	20/02/2023 to 25/02/2023	Vector Space of all the Linear Transformations, Dual Spaces, Bidual Spaces, Annihilator of Subspaces of Finite Dimensional Vector Spaces
7.	27/02/2023 to 04/03/2023	Null Space, Range Space of a Linear Transformation, Rank and Nullity Theorem, Class Test I
8.	13/03/2023 to 18/03/2023	Algebra of Linear Transformation, Minimal Polynomial of a Linear Transformation
9.	20/03/2023 to 25/03/2023	Singular and Non-Singular Linear Transformations, Matrix of a Linear Transformation
10.	27/03/2023 to 01/04/2023	Change of Basis, Eigen Values and Eigen Vectors of Linear Transformations
11.	03/04/2023 to 08/04/2023	Inner Product Spaces, Cauchy – Schwarz Inequality, Assignment II
12.	10/04/2023 to 15/04/2023	Orthogonal Vectors, Orthogonal Complement, Orthogonal Sets and Basis
13.	17/04/2023 to 22/04/2023	Bessel's Inequality for Finite Dimensional Vector Spaces, Gram-Schmidt Orthogonalization Process
14.	24/04/2023 to 29/04/2023	Adjoint of a Linear Transformation and its Properties, Unitary Linear Transformation, Class Test II
15.	01/05/2023 to 06/05/2023	Revision of Syllabus
16.	08/05/2023 to 16/05/2023	Revision of Syllabus



Signature of Teacher