

## Lesson Plan

Session: 2025-26

**Name of the Assistant Professor:** Bharat Kumar

**Class:** B.A. 2<sup>nd</sup> semester

**Subject:** Mathematics

**Paper :** INTRODUCTORY MATHEMATICS-II

**Paper Code :** CDLU/MDC/MAT/2/102

**Credit:** 3

Dates	Week	Topic
06.01.2026 to 10.01.26	1	Matrices & Determinants: Definition of a matrix. Types of matrices.
12.01.2026 to 17.01.26	2	Algebra of matrices; Properties of determinants; Calculation of values of determinants up to third order.
19.01.2026 to 24.01.26	3	Adjoint of a matrix, elementary row or column operations.
27.01.2026 to 31.01.26	4	Finding inverse of a matrix through adjoint and elementary row or column operations.
02.02.2026 to 07.02.26	5	Solution of a system of linear equations. Differential Calculus.
09.02.2026 to 14.02.26	6	Differentiation of standard functions.
16.02.2026 to 21.02.26	7	Theorems relating to the derivative of the sum, difference, product.
23.02.2026 to 28.02.26	8	Quotient of functions, derivative of trigonometric functions, logarithmic functions.

<b>Dates</b>	<b>Week</b>	<b>Topic</b>
09.03.2026 to 14.03.26	<b>9</b>	exponential functions, differentiation of implicit functions.
16.03.2026 to 21.03.26	<b>10</b>	logarithmic differentiation, derivative of functions, expressed in parametric form. Integral Calculus.
23.03.2026 to 28.03.26	<b>11</b>	<b>MID TERM EXAM</b>
30.03.2026 to 04.04.26	<b>12</b>	Integration as an inverse of differentiation summation, area under a curve, indefinite integrals of standard form.
06.04.2026 to 11.04.26	<b>13</b>	method of substitution, method of partial fractions, integration by parts.
13.04.26 To 18.04.26	<b>14</b>	definite integrals, reduction formulae.
20.04.2026 to 25.04.26	<b>15</b>	definite integrals of limit of sum and geometrical interpretation.
27.04.2026 to 05.05.26	<b>16</b>	<b>Revision</b>

  
Signature

# Lesson Plan

Session: 2025-26

**Name of the Assistant Professor:** Bharat Kumar

**Class:** B.A. 4<sup>th</sup> Semester

**Subject:** Mathematics

**Paper:** Analytical Geometry & Vector Calculus

**Paper Code:** BA/BSC/MD/MAT/4/DSC/202

**Credit:** 3

Dates	Week	Topic
06.01.2026 to 10.01.26	1	General equation of second degree: Classification of conic sections; centre,
12.01.2026 to 17.01.26	2	asymptotes, axes, eccentricity, foci and directrices of conics. Tangent at any point to a conic.
19.01.2026 to 24.01.26	3	chord of contact, pole of line to a conic, director circle of a conic. Polar equation of a conic.
27.01.2026 to 31.01.26	4	tangent and normal to a conic, confocal conics.
02.02.2026 to 07.02.26	5	Sphere: General form, Plane section of a sphere. Sphere through a given circle. Intersection of two spheres
09.02.2026 to 14.02.26	6	tangent plane and line, polar plane and line, orthogonal spheres,
16.02.2026 to 21.02.26	7	radical plane of two spheres and co-axal system of spheres. Cone: Equation of a cone, right circular cone, quadric cone,
23.02.2026 to 28.02.26	8	Enveloping cone. Tangent plane and condition of tangency

Dates	Week	Topic
09.03.2026 to 14.03.26	9	Cylinder: Right circular cylinder and enveloping cylinder. Central Conicoids: Equation of tangent plane.
16.03.2026 to 21.03.26	10	Director sphere. Normal to the conicoids. Polar plane of a point. Enveloping cone of a conicoid,
23.03.2026 to 28.03.26	11	<b>MID TERM EXAM</b>
30.03.2026 to 04.04.26	12	Enveloping cylinder of a conicoid, confocal conicoid, reduction of second-degree equations.
06.04.2026 to 11.04.26	13	Scalar and Vector product of three vectors, four vectors, reciprocal vectors, vector differentiation and derivative along a curve,
13.04.26 To 18.04.26	14	directional derivatives; Gradient of a scalar point function, divergence and curl of vector point functions, their geometrical meanings and vector identities.
20.04.2026 to 25.04.26	15	Vector integration: line integral, surface integral and volume integral. Theorem of Gauss, Green, Stoke and problems based on these.
27.04.2026 to 05.05.26	16	Revision

  
Signature

## Lesson Plan

**Session: 2025-26**

**Name of the Assistant Professor:** Bharat Kumar

**Class:** B.A./B.Sc. 6<sup>th</sup> Semester

**Subject:** Mathematics

**Paper:** Linear Algebra

Dates	Week	Topics
06.01.2026 to 10.01.26	1	Chapter 1: Vector spaces and subspaces, properties of vector spaces, subspaces, Exercise.
12.01.2026 to 17.01.26	2	Chapter 1: Theorems on vector-subspaces, Examples, Linear sum of subspaces, Direct sum, Disjoint subspaces, Examples and Exercise. <b><u>1<sup>st</sup> Assignment</u></b>
19.01.2026 to 24.01.26	3	Chapter 2: Linear combination of vectors, linear dependence and independence of vectors, Spanning sets, Basis of vector space, Ordered basis, Minimal generating set, Maximal linearly, Independent set.
27.01.2026 to 31.01.26	4	Chapter 2: Dimensions of a vector space, Identical spaces complementary subspaces
02.02.2026 to 07.02.26	5	Chapter 3: Quotient space, Dimension of quotient spaces, Test, Assignments-I
09.02.2026 to 14.02.26	6	Chapter 4: Linear transformations, Properties of L.T. vector space isomorphism, Find L.T. <b><u>2<sup>nd</sup> Assignment</u></b>
16.02.2026 to 21.02.26	7	Chapter 5: Null space, Range or Image of L.T., Fundamental theorem of vector space homomorphism, Rank and nullity of a L.T.
09.03.2026 to 14.03.26	8	Chapter 6: Algebra of L.T., Sum of L.T., Composition of two L.T., Singular and non-singular L.T., Invertible L.T.

Dates	Week	Topics
16.03.2026 to 21.03.26	9	Chapter 7: Matrix of a L.T. relative to ordered basis, Matrices of identity and zero transformations change of basis
23.03.2026 to 28.03.26	10	Chapter 8: Dual space, Vector space of all L.T., Bidual of a Vector space, Test and assignment- II
30.03.2026 to 04.04.26	11	<b>MID TERM EXAM</b>
06.04.2026 to 11.04.26	12	Chapter 9: Eigen values and eigen vectors of a L.T., Eigen space, Simplar matrices, Diagonalisation, Minimal polynomial
13.04.26 To 18.04.26	13	Chapter 10: Inner product spaces, Normal of a vector, Triangle inequality, Schwarz inequality, Normal linear space, Examples and theorms
20.04.2026 to 25.04.26	14	Chapter 10: Orthonormal set, Bessel's inequality, Gram-schmidt orthogonalization process, Theorems and Exercise.
27.04.2026 to 05.05.26	15	Chapter 11: Linear operations on inner product spaces, Adjoint operator , Same theorems on linear operators
09.03.2026 to 14.03.26	16	Revision and Test

  
Signature