

**Course: Minor
Linear Algebra**

Semester: II	Credits:2	Subject Code: BSMINMAT22301	Lectures: 30
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Course Outcomes

At the end of this course, the learner will be able to:

- CO1: Define Vector Spaces and related properties
- CO2: Describe Linear Transformation and related terms.
- CO3: Identify matrix is diagonalizable or not.
- CO4: Find orthogonal and orthonormal vectors.

Unit 1: Vector Space

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- Vector Spaces and Subspaces
- Introduction to Linear Transformations
- The Matrix of a Linear Transformation
- Null Spaces, Column Spaces, and Linear Transformations
- Linearly Independent Sets; Bases
- Coordinate Systems
- The Dimension of a Vector Space
- Rank
- Change of Basis
- Assignment

Unit 2: Eigen values and Eigenvectors

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- Eigenvectors and Eigenvalues
- The Characteristic Equation
- Diagonalization
- Eigenvectors and Linear Transformations
- Inner Product, Length, and Orthogonality
- Orthogonal Sets and orthonormal sets
- Orthogonal Projections
- The Gram–Schmidt Process
- Assignment

Recommended Text Books:

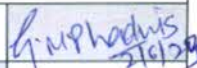
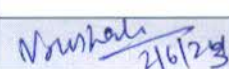
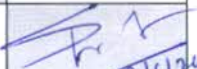

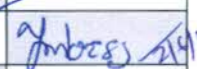
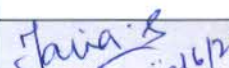

- David C. Lay, Steven R. Lay Judi J.Mc Donald *Linear Algebra and its Application*, Pearson Publication, Fifth Edition, 2016.




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Reference Books:

- Gilbert Strang, *Introduction to Linear Algebra*, Wellesley- Cambridge Press, Fifth Edition
- Howard Anton, *Elementary Linear Algebra with supplemental Applications*, Wiley Student Edition, Fourth edition.

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