**MA4702 Theory of Linear Algebra**

Vector spaces over any arbitrary field, Linear combination, Linear dependence and independence, Subspace, Basis and dimension, Linear transformations, Rank-Nullity Theorem, Matrix representation of linear transformations, Dual space, Similarity of Matrices, Inner product and orthogonality, Gram-Schmidt Orthonormalization Process, Orthogonal Projections and Applications, QR Decomposition, Eigenvalues, Eigenvectors and Diagonalization, Quadratic forms.

**References:**

1. Axler, Linear Algebra Done Right, 2nd Edn., UTM, Springer, Indian edition, 2010.
2. Friedberg H. Stephen, Insel J. Arnold, Spence E. Lawrence, “Linear Algebra” PHI Learning, Fourth Edition 2009.
3. G. Strang, Linear Algebra and Its applications, Nelson Engineering, 4th Edn, 2007.
4. S. Lang, Linear Algebra, Undergraduate Texts in Mathematics, Springer-Verlag, New York, 1989.
5. H.E. Rose, Linear Algebra, Birkhauser, 2002.
6. K. Hoffman and R. Kunze, Linear Algebra, Prentice Hall of India, 1996