

MA 402-Linear Algebra[LTP 4-0-0]

Vector spaces, bases and dimensions, change of bases and change of coordinates, sums and direct sums

Linear Transformation, Properties of Linear Transformation, Change of basis, matrix representations of linear transformation, rank & nullity

Eigen value & Eigen vectors, Cayley-Hamilton theorem, Inner product spaces, Length and orthogonality, orthonormal bases, Gram-Schmidt process, Least squares Problems

Minimal polynomials, Elementary canonical forms: Diagonalization, triangulation, primary decomposition etc.

Bilinear forms, Quadratic forms, Reduction to Quadratic forms, symmetric, skew symmetric, positive & semi-positive forms etc.

References:

- (1) Linear algebra and its Applications: Gilbert Strang, Cengage Learning
- (2) Linear Algebra A Modern Introduction: David Poole, Brooks/ Cole