Indian Institute of Technology Kharagpur
LinearAlgebra (MA20105)
Course Instructor: Dr. H.P. Sarwar

Course Details:

1. **Course objective: To understand the Linear Algebra subject and its potential applications to engeneering e.g. computer science, statistics, data structures, graph theory, industrial managements, network and machine learning etc**

2. **Contents: Real or Complex Vector spaces, linear combination, linear dependence and independence, basis and dimension, inner-product spaces, linear transformations, matrix representation of linear transformations, linear functional, dual spaces, eigen values and eigen vectors, rank and nullity, inverse and linear transformation, Cayley-Hamilton Theorem, norms of vectors and matrices, transformation of matrices, adjoint of an operator, normal, unitary, hermitian and skew-hermitian operators, quadratic forms.**

3. **Prerequisite is NULL**

4. **Class timing: Wednesday 11am–11:55am, Thursday 12:00pm –12:55pm; Friday 8:00am–8:55am.**

5. **Refrences: (1) Linear Algebra and its applications by Gilbert Strang (2) Optional: Linear Algebra by K. Hoffman and R. Kunze.**