

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in CSE (Artificial Intelligence & Machine Learning)

(Applicable from the academic session 2020-2021)

BSCAIML 301

Linear Algebra (BS)

2L:0T:0P 2 credits

Module I

10L

Real Matrices, Complex Matrices, Hermitian and skew Hermitian Matrices, Unitary Matrices, Elementary row and column operation, Echelon Matrix.

System of linear equation: LU Decomposition Method

Matrix of a Linear mapping, Null Space, Range Space, Injectivity and Surjectivity, composition of linear Mapping, Invertible linear maps and Linear operators, Invertible operators.

Module II

10L

Inner product space: Definition and properties of inner product space, orthogonality, Cauchy Schwarz inequality, Norm and Orthogonal Basis and Gram-Schmidt orthonormalisation.

Schur's Theorem, Linear functional, Riesz representation Theorem, Orthogonal orthogonal complement or dual subspace

Singular value and singular vectors singular value decomposition.

Text book and Reference books:

1. Advanced Engineering Mathematics, E Kreyszig, Wiley-India
2. Higher Algebra, S. K. Mapa, Levant Books.
3. Advanced Higher Algebra, Chakravorty and Ghosh, U N Dhar Pvt. Ltd.