

VASAVI COLLEGE OF ENGINEERING (Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031
DEPARTMENT OF MATHEMATICS

LINEAR ALGEBRA AND ITS APPLICATIONS
(OPEN ELECTIVE-I for all branches of 2/4 B.E sem-3)

Name of the Faculty: Mr.Y.Bhanu Prakash

L:T:P (Hrs./week):2:0:0	SEE Marks :60	Course Code: U200E310MA
Credits : 2	CIE Marks: 40	Duration of SEE: 3 Hrs

UNIT – I (8 classes)

Vector Spaces-Definition of a Vector Space, Subspaces, Basis and Dimension, Coordinates and Change of Basis.

UNIT – II (6 classes)

Linear Transformation -I
Definition of Linear Transformation- Properties of Linear Transformations – Product of Linear Transformations – Algebra of Linear Operators.

UNIT – III (6 classes)

Linear Transformation -II
Range and kernel of a linear map – Dimension of Range and Kernel - Rank and nullity – Inverse of linear transformation - Rank nullity theorem (without Proof)- Matrix of Linear Transformation.

UNIT – IV (8 classes)

Inner Product Spaces-The Dot Product on R and Inner Product Spaces, Orthonormal Bases, Orthogonal Complements, Application: Least Squares Approximation

Learning Resources:

1. Introduction to Linear Algebra with Application, Author : Jim DeFranza, Daniel Gagliardi, Publisher : Tata McGraw-Hill
2. An Introduction to Linear Algebra, V.Krishna Murthy, V.P Mainra, J.L Arora, Affiliated to East-West Press Pvt Ltd

Reference Books:

- (i) Elementary Linear Algebra, Author : Anton and Rorres, Publisher : Wiley India Edition.
- (ii) Advanced Engineering Mathematics, Author : Erwin Kreysig, Publisher : Wiley Publication
- (iii) Elementary Linear Algebra, Author : Ron Larson, Publisher : Cengage Learning

The break-up of CIE : Internal Tests + Assignments + Quizzes

1	No. of Internal Tests	:	2	Max. Marks for each Internal Tests	:	30
2	No. of Assignments	:	2	Max. Marks for each Assignment	:	5
3	No. of Quizzes	:	2	Max. Marks for each Quiz Test	:	5
	Duration of Internal Tests	:	90	Minutes		

TSa
16/9/21