SARASWATI MAHILA MAHAVIDYALAYA,PALWAL
SESSION:**2021-22**

LESSON PLAN   Sem : Even

Name of faculty : Ms.Bijendri   Class : Bsc-III(CS)

Designation : Assistant Professor in Maths   Subject : Linear Algebra

Sr.No.	Topics/chapters	Lectures	Topics of assignment/test
1.	Vector spaces, subspaces, Sum and Direct sum of subspaces, Linear span, Linearly Independent and dependent subsets of a vector space. Finitely generated vector space, Existence basis of a finitely generated vector space, Finite dimensional vector spaces, Invariance of the number of elements of bases sets, Dimensions, Quotient space and its dimension.	Lect 1 to Lect 20	Test of subspaces, Linear span.
2.	Homomorphism and isomorphism of vector spaces, Linear transformations and linear forms on vector spaces, Vector space of all the linear transformations Dual Spaces, Bidual spaces, annihilator of subspaces of finite dimentional vactor spaces, Null Space, Range space of a linear transformation, Rank and Nullity Theorem.	Lect 21 to Lect 40	Assignment of Dual Spaces, Bidual spaces.

3.	Algebra of Liner Transformation, Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations, Matrix of a linear Transformation, Change of basis, Eigen values and Eigen vectors of linear transformation.	Lect 41 to Lect 60	Test of Singular and non-singular linear transformations, Matrix of a linear Transformation, Change of basis.
4.	Inner product spaces, Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements,Orthogonal sets and Basis, Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt, Orthogonalization process, Adjoint of a linear transformation and its properties, Unitary linear transformations .	Lect 61 to Lect 80	Test of Inner product spaces.