

GOVT. COLLEGE FOR WOMEN, BAHADURGARH

LESSON PLAN:- 6th Semester

CLASS:- B A /B SC -3 (MATHEMATICES)

TEACHER'S NAME:- RAVINDER KUMAR

PAPER:- Linear Algebra

WEEK 1	Vector spaces, subspaces, Sum and Direct sum of subspaces.
WEEK 2	Linear span, Linearly Independent and dependent subsets of a vector space. Finitely generated vector space, Existence theorem for basis of a finitely generated vector space.
WEEK 3	Finite dimensional vector spaces, Invariance of the number of elements of bases sets, Dimensions, Quotient space and its dimension.
WEEK 4	Homomorphism and isomorphism of vector spaces.
WEEK 5	Linear transformations and linear forms on vector spaces, Vector space of all the linear transformations Dual Spaces, Bidual spaces.
WEEK 6	Annihilator of subspaces of finite dimensional vector spaces, Null Space, Range space of a linear transformation, Rank and Nullity Theorem.
WEEK 7	Algebra of Liner Transformation, Minimal Polynomial of a linear transformation.
WEEK 8	Singular and non-singular linear transformations, Matrix of a linear Transformation.
WEEK 9	Change of basis, Eigen values and Eigen vectors of linear transformations.
WEEK 10	Inner product spaces, Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements.
WEEK 11	Orthogonal sets and Basis, Bessel's inequality for finite dimensional vector spaces.
WEEK 12	GramSchmidt Orthogonalization process, Adjoint of a linear transformation and its properties, Unitary linear transformations.

