

LESSON PLAN 2022-23

NAME:-Ms. Indu Gaba

DEPARTMENT: - Mathematics Department

CLASS: - M.Sc- 2nd Sem

SUBJECT: -Algebra

weeks	Topics
Feb-III	Introduction to syllabus
	Commutators Definition and related problems
	Derived group and related theorems
	Theorems Continue
Feb-IV	Theorems continue
	Higher Commutators and related theorems
	Theorems Continue
	Three subgroup lemma of P. Hall
	Corollaries of P. Hall Lemma
	Central series and related theorems
March-I	Theorems Continue
	Nilpotent Group and related theorems
	Theorems Continue
	Theorems continue
	Theorem continue
	Test
	Upper central series
	Lower Central series
	Subgroups of Finitely Generated Nilpotent Groups
March-III	Sylow subgroup of nilpotent groups
	Unit-II
	Theorem related to minimal polynomial(Invariant subspaces)
	Theorem Continue
	Theorem related to Triangular matrix
March-IV	Theorem Related to Characteristic Polynomial
	Similar linear Transformation and related theorems
	Related Exercise
	Nilpotent Transformation
	Related exercise
April-I	Related Exercise
	Cyclic Subspace and related theorems
	Theorems continue
	Theorems continue
	Uniqueness Of Invariants
April-II	Theorems continue
	Test
	Primary decomposition Theorem
	Jordan block

	Canonical forms
	Cyclic Module
	Companion matrix
April-III	Rational Canonical forms
	Unit-III
	Module and submodule Definition
April-IV	Quotient Module and related theorems
	Theorems continue
	Module generated by non empty subset
	Theorems Continue
	Schur's Lemma
	Theorems Continue
May-I	Theorem Continue
	Idempotents and related theorems
	Homomorphism and Related theorems
	Direct Summand and related theorems
	Theorems Continue
	Fundamental theorems
May-II	Endomorphism Rings
	Theorems Continue
	Semi Simple Modules
	Related Theorems
	Related theorems
May-III	Free modules
	Rank of free modules
	Submodules of free modules
	UNIT-IV
	Endomorphism Rings
	Theorems Continue
May-IV	Noetherian Modules
	Related theorems
	Related theorems
	Artinian Modules
	Theorems continue
	Artinian Rings and Revision

LESSON PLAN 2023-24

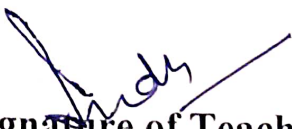
NAME:-Dr. Indu Gaba

DEPARTMENT: - Mathematics

CLASS: - B.Sc - 2nd Sem

SUBJECT: -Number Theory

Week	Topic
Feb-III	Divisibility, G.C.D.(greatest common divisors, L.C.M.(least common multiple) Primes), Examples
Feb-IV	Fundamental Theorem of Arithmetic ; Linear Congruences; Example
March-I	Fermat's theorem. Wilson's theorem and its converse, Linear Diophantine equations in two variables
March-II	Symmetric, Skew-symmetric, Hermitian and skew Hermitian matrices. Elementary Operations on matrices. Rank of a matrices. Inverse of a matrix.
March-III	Linear dependence and independence of rows and columns of matrices. Row rank and column rank of a matrix. Eigenvalues, eigenvectors and the characteristic equation of a matrix
March-IV	Minimal polynomial of a matrix. Cayley Hamilton theorem and its use in finding the inverse of a matrix.
May-I	Unitary and Orthogonal Matrices, Test
May -II	Relations between the roots and coefficients of general polynomial equation in one variable. Solutions of polynomial equations having conditions on roots.
May-III	Common roots and multiple roots. Transformation of equations. Test
May-IV	Legendre symbols. Lemma of Gauss Examples
June-I	Nature of the roots of an equation Descarte's rule of signs. Solutions of cubic equations (Cardon's method). Biquadratic equations and their solutions
June-II	Revision of whole syllabus


Signature of Teacher