

Course Descriptions :

Concept of rings and fields, homomorphisms, vector spaces, and polynomials. Extensions of fields and factorization of polynomials. Galois theory, automorphism of fields, norms and traces, and normal classes. Applications to : finite fields, cyclotomic extensions, cyclic extensions. Wedder Burn's theorem, ruler and compass construction and generic polynomials.

Course Contents**No. of Lecture Hours**

1. Groups, rings, integral domains, fields	9
- Groups	
- Rings, integral domains and fields	
- Polynomial rings	
- Vector	
2. Some elementary field theory	9
- Extensions	
- Algebraic extensions	
- Splitting fields	
- Algebraic closure	
- Finite fields	
3. The structure of algebraic	12
- The structure of an irreducible polynomial	
- Seperable and inseperable extensions	
- Normal and Galois extension	
4. Galois theory	15
- The Galois correspondence theorem	
- The normal basis theorem	
- Norm and trace	
- Cyclotomic extensions	
- Cyclic extensions	
- Abelian extensions	
- Solvable extensions	
- Theory of equations	

Total 45

