

Nepal Algebra Project(NAP)
Central Department of Mathematics
Tribhuvan University, Kirtipur, Kathmandu, Nepal
Fields and Galois Theory

Course Instructor: Prof. Kalyan Chakraborty

Summary of NAP: Module 5 - Lecture 3

- Introduced cyclotomic polynomials with examples. Then Continuing from the last lecture I showed that the injective homomorphism $Gal(F[\zeta]/F) \longrightarrow (\mathbb{Z}/n\mathbb{Z})^*$ is in fact an isomorphism incase when $F = \mathbb{Q}$ by showing that the n -th cyclotomic polynomial Φ_n is irreducible over $\mathbb{Q}[x]$. Then after introducing characters I proved the 'Dedekind's theorem on linear independence of characters' and re-stated it in the format of Galois extensions as a corollary.