Nepal Algebra Project(NAP)
Fields and Galois Theory “multiple hands" course in Nepal
Central Department of Mathematics
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NAP: Module -2, Lecture -2, Wednesday, 17 May, 2017

- Basic stuff on maps of simple algebraic extensions: “Roots must map to roots." Also, if the polynomial is irreducible, a root can map to any root. Vague discussion of the basic ideas of Galois Theory: You don't necessarily get n! different maps, e.g., with $\alpha := \sqrt{2+\sqrt{2}}$, with roots $\pm\alpha$ and $\pm\beta$, where $\beta = \sqrt{2-\sqrt{2}}$, if $\alpha \mapsto \beta$, then $-\alpha \mapsto -\beta$ is forced.
- We proved that splitting field is unique up to F-iso.
- Basic stuff on algebraically closed and (relative) algebraic closure.
- Proposition 1.44; mentioned Gilmer's theorem: If K/F is algebraic and every $f(X) \in F[X]$ has a root in K, then $K = F^a$.
- Set of algebraic elements over F forms a subfield.