MAT 468
Field Theory

by
Ayberk Zeytin

Be careful what you wish for, you might get it[1].

Prerequisites:
Math 204 and Math 262 and some familiarity with polynomial rings

Credit: (4-0)4

Course Outline(tentative):

6 weeks Equations of small degree and their solutions, examples of equations over various fields, basic theory of field extensions, finite and algebraic extensions, splitting fields and algebraic closure, separable and inseparable extensions, normal extensions
4 weeks Basic definitions of Galois theory, fundamental theorem of Galois theory.
4 weeks Galois group of a polynomial, solvable and radical extensions, insolvability of the quintic

Suggested textbook:
There is no single book that will be followed. The following list of books will be very helpful:

- Dummit, R.S. & Foote, R.M., *Abstract Algebra*
- Hungerford, T.W., *Algebra*
- Lang, S., *Algebra*
- Stewart, I.A., *Galois Theory*
- Wolfart, J., *Einführung in die Zahlentheorie und Algebra*

Schedule: Tuesday and Wednesday 11.00-13.00 / FEF9

Grading:

- 2 midterms: % 50
- final: % 50

[1] Chinese proverb.