

Math 422/501 - Term 1, 2018-2019

Fields and Galois Theory

Time and Location: MWF 2-3, MATX 1118.

Instructor: Kalle Karu

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Office hours: Mon 3-4, Fri 1-2.

Textbook: *Fields and Galois Theory, Group Theory*. Online course notes by J.S. Milne.
<http://jmilne.org/math/CourseNotes/>

Course description. The main topic of this course is Galois theory of fields. To prepare for this, we also cover topics from group and ring theory.

We will assume knowledge of basic group theory. We start by recalling some topics in the theory of groups, such as group actions, composition series, solvable groups. After group theory we cover basics of ring and field theory. In the main part of the course we study field extensions and their Galois groups.

Homework. Weekly homework assignments will be posted each Friday, and they are due the following Friday. You are welcome to discuss the homework problems with other students, or consult other books, but please write up your own solutions.

Exams. We will have one midterm exam during regular class hours on Friday November 2, and the final exam scheduled by the university.

Final Grade. The first midterm exam counts for 20% of your final grade, the final exam for 40%, and the homeworks for 40%.

Other books. *Advanced Modern Algebra* by Joseph J. Rotman. *Abstract Algebra* by Dummit and Foote. *Algebra* by Lang, *Algebra* by Artin.