MODERN ALGEBRA - GALOIS THEORY
MATH 172 • SPRING 2015
TTH 11:10–12:30, SPR 2360

- Instructor: Carl Mautner
- Email: (Instructor's last name)@math.ucr.edu
- Office: Surge 255
- Office hours: M 1-2:30, W 11-12:30 or by appointment
- Class website: http://www.math.ucr.edu/~mautner/S15
- Teaching Assistant: Matthew O'Dell

Course objectives: We will study a collection of questions that go back to ancient times and were only answered in 19th century with the creation of modern algebra! Along the way we will turn classical geometric problems into questions about polynomials and their solutions. We will explore connections between polynomials and fields and finally conclude with Galois theory - the crowning jewel of early modern algebra and a powerful tool for studying fields and their extensions.

Text: *Galois Theory* by David A. Cox, 2nd edition. The book can be accessed from any computer on the UC network. You can find the link in the library catalog:

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http://scotty.ucr.edu/record=b4143993~S5

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Supplementary texts: *Abstract Algebra: Theory and Applications* by Thomas W. Judson (http://abstract.ups.edu/) and *Galois Theory* by Ian Stewart, any edition (the 3rd edition is on 2 hour reserve at the library).

Grading: The grade will be based on homework assignments (25%), one in-class exam (30%) tentatively set for Tuesday, May 5, and a final exam (45%) on June 11, 8-11 am. Final letter grade cut-offs will be made at the end of the semester and will be no worse the standard scale (e.g., if you get above 90% you are guaranteed an A or A-).

Any instance of cheating will result in a failing grade for the course.

Homework: Homework will generally be assigned each class meeting and due a week later at the beginning of class. A list of the homework problems will be kept on the webpage. Late homework will not be accepted, but the lowest two homework grades will be dropped.

Collaboration: You are encouraged to discuss homework problems with other students. The final write-up of any solution, however, must be your own. Copying other students' solutions is cheating and treated as such.