Instructor: David Wright  
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Office Hours: MWF 2:00-3:00

Class Meetings: MWF 1:00-2:00 in Cupples I, Rm 111


Prerequisites: We assume basic familiarity with vector spaces, groups, rings, and fields, essentially the material covered in Math 429-430.

Content: This course is a study of the basic structures and methods of modern abstract algebra. It will present a detailed survey of group theory, including the Sylow theorems, solvability, and the structure of finitely generated Abelian groups; the theory of rings, including unique factorization, polynomial and power series rings, and Noetherian rings; and the theory of fields, including finite fields, extensions, and Galois theory.

Goals:  
1. Cover the algebraic concepts and theorems which every mathematician should know.  
2. Prepare Ph.D. students for the Algebra Qualifying Exam in May 2002.  
3. Develop/enhance the students’ skills in proof and problem solving.  
4. Show how algebra relates to other areas of mathematics.

Exams:  
Midterm Exam: Wednesday, October 10 (in class)  
Final Exam: Monday, December 10, 10:30am-12:30pm

Homework: Assignments will be given out approximately every ten days. The dates of the assignments are: 9/5, 9/14, 9/26, 10/5, 10/17, 10/26, 11/7, 11/16, 11/28. Five designated exercises in each assignment will be collected and graded, but all of the problems should be worked. The two lowest homework scores will be dropped in calculating the homework score. Students are encouraged to visit office hours to get help or hints toward solving the problems. When an assignment is made, solutions to the previous assignment will be distributed.
**Homework Grader:** Leonid Kovalev  
*Office:* Room 209, Cupples I  
*E-mail:* lkovalev@math.wustl.edu

**Grading:** The final grade will be based on homework and exam performance as follows. Each student’s final average will be calculated two ways: (1) 1/4 weighting on the homework, 1/4 weighting on the Midterm, and 1/2 weighting on the Final (2) 1/3 weighting on the Midterm and 2/3 weighting on the Final. The higher of the two will be taken.