

MATH 731 FALL 2008

Class Meetings: MW 11:00 am - 12:15 pm in EMS E140

[Thanksgiving break November 26–30 - no class on Wednesday, Nov. 26;

Last class December 10]

Instructor: Allen Bell, EMS E404a, 229-5264; e-mail adbell@uwm.edu

Office Hours: MW 10:00-10:50 (subject to change)

Other times by appointment: don't hesitate to contact me by phone or e-mail, or to drop in.

Web Page: <http://www.uwm.edu/~adbell/> — then follow the link for Math 731.

Text and Topics: The “text” will consist of notes I post on the web. [Please let me know of any errors or problems in the notes.] Some of the topics are covered in the Math 631–2 textbook *Algebra* by Michael Artin (parts of chapters 6,7,8,9,13,14), but some are not. The class is *not* designed to follow Artin's book.

We will begin by recalling some general definitions (e.g., orders, equivalence relations, groups, rings, fields) and some general constructions (e.g., subobjects and quotient objects). We then review Linear Algebra and introduce Multilinear Algebra. After that we will cover Group Theory, Group Representations, and Galois Theory.

Grades: Your grade will be based on the homework and the examination(s). The final exam will count 30% of your final grade. The grading scale will be determined based on the class performance (i.e., there will be a curve). See comments under **Homework** and **Exams** below.

Homework: It is crucial that you do the homework. It is impossible to really learn mathematics without doing problems! In addition, your results on the homework will be far and away the most important factor in determining your grade.

The notes will contain a number of homework problems, both at the end of and in the middle of chapters. Some homework will be collected and graded; you may be asked to present some problems at the board. Most of the problems will not be collected or graded, but we will discuss homework in class whenever you have questions about it, and I encourage you to come to my office hours to discuss homework problems. You are free to discuss homework problems among yourselves, but you *must* do your own work. Please remember: if you don't do it yourself, you won't learn it.

Exams: I anticipate that there will be one midterm exam during the regular semester, but I may change my mind about this. I plan to have a comprehensive in-class final exam. The final exam is scheduled for Monday, December 15 from 10:00 am to noon.

Other: If you have any special requirements or concerns regarding this course, please let me know as soon as possible. Friday, October 24 is the last day to drop the class (with a W on your transcript) without special approvals.