

Math 8201

General Algebra

Fall Semester 2017

Instructor: Peter Webb
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Course Site: <http://www.math.umn.edu/~webb>
Office Hours: 11:15-1:00 MWF or by appointment.
Text: D.S. Dummit and R.M. Foote, Abstract Algebra, 3rd edition.

Course Content

Over the two semesters we will cover the topics that appear on the official graduate preliminary written exam syllabus, obtainable at

<https://math.umn.edu/content/written-exam-syllabus-and-recommended-courses>

and we may do more than this. Most of this syllabus is treated by Dummit and Foote (the spectral theorem for symmetric and Hermitian matrices is missing). We will start in the first semester by going through Chapters 1 - 6 on group theory, and then start on Chapters 7 - 9 and section 15.1, which are about ring theory. Section 9.6 is about Groebner bases, which are not on the written exam syllabus, and we may miss that out.

Course Assessment

Your grade will be determined by your performance on homework, quizzes given in class and a final exam. I will take in homework from you each Monday, starting on 9/18/2017. Homework may be given to me during class, and I will also accept it if you put it in my mailbox before 4pm on Monday. There will be about thirteen sets of homework altogether during the semester. Every second Monday there will be a 30 min. quiz in class on the subject matter of the homework due that day and on the previous Monday. There will be 6 quizzes altogether, on 9/25/17, 10/09/17, 10/23/17, 11/6/017, 11/20/17 and 12/4/17. We will finish with a final exam on all the topics covered, to be given in exam week. This may be either a formal sit-down exam, or a take-home exam. We will discuss this. Each quiz will count 6%, the homeworks will count 48%, and the final exam will count 16%. I will only give make-up quizzes for reasons officially recognized by the university, including university sponsored activities and documented illness. Otherwise, if you miss a quiz and explain to me your genuine reason I will give you a score which is the average of your remaining quizzes. If you do not talk to me about missing a quiz you get 0, and I am most unlikely to think favorably about missing 3 or more quizzes. I will also drop the lowest homework score of each person.

Expectations of written work

You may discuss homework problems with other students, indeed I encourage you to do this; but I would like each person to write out their own homework as an independent effort. If the final exam turns out to be a take-home exam, I expect this to be entirely your own work, done without any collaboration.

As concerns your written style, I expect your homework to contain full written explanations of your arguments. These should be written in English sentences (starting with a capital letter, containing a verb and finishing with a period!), and read smoothly as English. If some portion of argument is missing from what you write, you will not get credit by explaining afterwards that

you knew it really but you just omitted to write it down. I expect that you all will come with some experience of writing mathematical arguments in this fashion.

Other books

S. Lang, Algebra; M. Artin, Algebra; I.N. Herstein, Topics in Algebra; J. Rotman, Advanced Modern Algebra; N. Jacobson, Basic Algebra I, II; P. Aluffi, Algebra: Chapter 0.

Incompletes

These will only be given in exceptional circumstances. A student must have satisfactorily completed all but a small portion of the work in the course, have a compelling reason for the incomplete, and must make prior arrangements with the **professor** for how the incomplete will be removed, well before the end of the quarter.

Academic Dishonesty

Academic dishonesty in any portion of the academic work for a course shall be grounds for awarding a grade of F or N for the entire course.

Date of this version of the schedule: 9/4/2017