

Mathematics 506 Spring 2004

Instructor: John Palmieri, Padelford C-538, 543-1785

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Time and place: MWF 9:30, PDL C-036

Office hours: drop in, and by appointment

Grader: Sunil Chebolu, Padelford C-541

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Office hours: tba (probably the same as last quarter)

Web page: <http://www.math.washington.edu/~palmieri/Math506/>

Text book: *Abstract Algebra*, 2nd edition, by Dummit and Foote.

Grading: I will give weekly homework assignments. There may be a midterm, and there will be a take-home final exam. The final exam will be due on Wednesday, June 9, at noon. If there is no midterm, the final would be worth 40% of the grade and the homework 60%. If there is a midterm, it would be worth 10% of the grade; the final would be 35%, and the homework 55%.

Plan for the course: I hope to cover large parts of chapters 15–19 of the book: commutative rings, algebraic geometry, artinian rings, discrete valuation rings, Dedekind domains, group cohomology, group representation theory, and character theory. I don't think we will have time for all of this, so I am happy to hear requests for what you do and don't want to cover.

Prerequisite: Math 505.

Other books: There are lots of fine algebra books out there, but I'm not sure which will be good supplements for the material we're doing this quarter. *An Introduction to Commutative Algebra* by Atiyah and MacDonald is a standard book for the material in chapters 15 and 16, but is quite terse in its presentation. Maybe *Commutative ring theory* by Matsumura would work, too. I'll keep looking for books to recommend as we go along, if you want me to.

All of the information here is the unchanged from last quarter:

Reading and homework: The best way to learn mathematics is to do it; so you should read the book and do the homework problems. I will provide weekly reading assignments; by **each Sunday evening at 9:00 pm**, you need to send me an email message about the reading: provide a brief summary of the most important ideas in the reading, and also at least one question about the reading that you would like me to address in class. All together, these reading reports will count the same as one homework assignment; you may skip one reading report without any penalty.

By the way, when you read a section of the book, you should also read all of the problems. Sometimes there are interesting results in the problems, and sometimes an unassigned problem can provide clues about how to do an assigned one. (For example, if you are trying to do problem 4 in Section 13.2 and are not quite sure about the degree of $1 + \sqrt[3]{2} + \sqrt[3]{4}$ over \mathbf{Q} , the last sentence of problem 20 essentially tells you that it's equal to 3.)

As mentioned above, I will assign homework weekly. It will be due **each Wednesday at noon**, in my mailbox. A good approach for homework is to first try to do a problem on your own, and then if you run into difficulties, you can discuss the confusing issues with your classmates. Of course, you are certainly welcome to ask me or the TA for suggestions.

Office hours: Feel free to drop by my office; if I'm there and not talking to someone else, I'm probably available to talk about algebra. If I'm not there, email is a good way to contact me, since I check it pretty regularly. I will not be in my office on most Thursdays.

Grades: Here is the range of grades which I will assign (at least to the graduate students in the class), and interpretations of those grades.

grade	interpretation
3.8–4.0	very good (also suitable for a course prelin pass)
3.5–3.6	mostly solid, with a few holes
3.2–3.4	some serious flaws in your performance
3.0–3.1	not good
2.7	failing (for graduate students)