



MTH 461G: Survey of Modern Algebra

CLASS: DOOLY 106, MoWeFr 14:30–15:20

FINAL: DOOLY 106, MAY 9, 2018, 14:00–16:30

Textbook: My book *Introduction to Algebra: Rings First* will be freely available on my website; it's a book under construction and I plan to add exercises as we go through the material. Another inexpensive textbook that I can recommend for further reading, is Cooperstein's *Introduction to Groups, Rings, and Fields*, available at www.centerofmath.org/subjects/algebra/index.html. Caveat: I follow a different order than Cooperstein, postponing his Section 2 to the end.

Content: The tentative outline is

- Preliminaries: 2-3 weeks
- Rings: 5 weeks
- Fields: 3 weeks
- Groups: 2-3 weeks.

Grading policy:

- Three exams (two midterms and one final). The final weighs double.
- Makeups will be given only in case of documented medical excuse.
- Homework will be posted weekly on my website (except for test weeks). Handing in the solution is not compulsory, but strongly recommended. Homework will be collected on Fridays; all pages should be stapled together, and late homeworks will not be accepted. Solving and understanding the feedback is the best preparation for midterms.
- Cooperation in homework is allowed, as long as you indicate it clearly on top. (e.g. "Solved ex. 2 with Luigi & Mario".)
- Class participation and homework play an important role in determining final grades, especially in borderline cases.

General rules:

- During class, cell phones tablets and computers must be put away. (Yes, even if the book is digital: in my experience, it is better if you take your own notes.) Questions and feedback are always welcome.
- Presence at office hours is not compulsory, but recommended. Showing up by the dozen the day before the test is not efficient; please consider coming by when you have the first doubts, and plan ahead.
- Tests are designed to cover the material explained in class (students are expected to keep track of the topics presented.) If you wish, you may bring one sheet with formulas at each exam.
- For extra WRITING CREDIT, hand in a scientific essay entitled "*The Journey from Natural Numbers to Real Numbers*", 8–12 pages long, including abstract and bibliography. For full credit, you are expected to include other references than the textbook; any external source must be acknowledged and cited properly. The essay should contain at least 3 theorems with a completely articulated proof. Which theorems to present, is entirely up to you. Deadlines for credit: A first draft should be submitted 1 week after 1st midterm; the final revision is to be submitted by April 15.

With this, I wish you a lovely Spring semester here at The U!

Bruno Benedetti
Assistant Professor