



## MTH 461P: Survey of Modern Algebra

CLASS: DOOLY 206, TUE/THU 11:00–12:15

FINAL: DOOLY 206, SEE UM WEBPAGE

**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 I can recommend for further reading is Cooperstein's *Introduction to Groups, Rings, and Fields*, available at [www.centerofmath.org/subjects/algebra/index.html](http://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. The average is your grade.
- Makeups will be given only in case of documented medical excuse.
- Homework will be typically assigned weekly (except for test weeks). Handing in is not compulsory, but strongly recommended. Class participation and homework don't influence the grade directly, but play an important role in determining final grades in borderline cases. (E.g. if you are between B and C, and I never saw you, it's a C.) Homework is collected on Thursdays; all pages should be stapled together; no late submissions.
- Cooperation in homework is allowed, as long as you indicate it clearly on top. (e.g. "Solved ex. 2 with Luigi & Mario".)

**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.
- Showing up at office hours is not compulsory, but recommended. Showing up by the dozen the day before the test, with questions from week one, is not efficient. Please come by when you have the first doubts.
- Tests are designed to cover the material explained in class. I will not hand out solutions/studyguides/fac simile tests/summaries of what I covered: students are expected to keep track of the topics presented.
- 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. Per university regulations, you are expected to cite all references (other than my textbook) properly, and to include at least 3 theorems with a completely articulated proof. Which theorems, is up to you. Deadlines: First draft 1 week after 1<sup>st</sup> midterm; final version by April 15.

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

Bruno Benedetti  
Assistant Professor