Syllabus for ``Modern Algebra'', 461D, Spring 2017

Textbook: I will partly follow *An Introduction to Groups, Rings and Fields*, by Bruce Cooperstein (available for $9.95 at www.centerofmath.org/subjects/algebra/index.html). If you prefer a more talkative style, a possible further read is *A Book of Abstract Algebra* by Charles Pinter ($18). Some material won't be contained in either book, so the best strategy is to type lecture notes from my class. Ideally this should be done collectively, co-typing a shared LaTeX file on Google Sheets or a similar platform: this way, we can create our own textbook.

Content: The course will be on chapters 2 and 3 of the book, plus, time permitting, part of chapter 6. Chapters 1 ("Preliminaries") and 4 ("Vector spaces") are part of the prerequisites. Tentative outline:
- (if not covered before) Euclidean division, modular arithmetic: one week
- Groups: four weeks.
- Rings: four weeks.
- Fields: two weeks.

Grading policy: The grade will be determined by two midterms (equally weighted) and the final (doubly weighted), which will be comprehensive. The homework, the participation, and the attention, will play a key role in borderline cases. Homework will be assigned weekly, either as part of the lecture or through my teaching page, www.math.miami.edu/~bruno/teaching.html. Typically there will be no homework in the weeks of tests. The homework will be collected on Fridays: all pages should be stapled together. Late homework will be burnt in a barbecue party. I strongly recommend doing the homework timely and typing/keeping track of lecture notes, as I find it the best way to prepare for the tests. (In other words, the homework is my "studyguide" for the test.)

General rules: Cell phones and computers are not allowed; if you like to consult the book during class, you can always bring a printed copy of course. The usual general rules of UM on honor code, behavior, et cetera, apply; makeups will be given only in case of documented medical excuse. I encourage cooperation *in the homework* (not in tests!), as long as you mention it explicitly. For example, you could write on top "solved exercises 1,2,5 with Mario, and exercises 3,4,6 with Luigi".

Office hours: I receive in Ungar 533 on Wednesdays, from 15:30 to 17:30; or by appointment. You're not bothering me: those two hours I'm very happy to re-explain things that are not clear. The course is not easy. When I was you age and attended it, I learned a lot by going to office hours and asking the professor what was going on. Coming to office hours is not compulsory, but recommended. Please do not wait the day before the exam to show up by the dozen. (I can only sit four comfortably.)

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

Bruno Benedetti
Assistant Professor