



Congratulations! You found my syllabus for: MTH 461S: Survey of Modern Algebra

Textbook: Shahriari, *Algebra in Action*, American Mathematical Society. Another textbook I can recommend, especially as a source of exercises, is Cooperstein, *An introduction to groups rings and fields*. I follow the book freely. That means: (1) the notes you are going to take from my classes are the best learning source; (2) coming to class is worth it, as I am not just reading a book to you.

Content: The tentative outline is:

- Integers (induction and fundamental theorem of arithmetics): Three weeks.
- Groups: five weeks:
- Rings and fields: Remaining weeks.

Rules:

- Grading policy: Two midterms and a final; the final weighs double.
- Makeups will be given only in case of documented medical excuse, and typically result in oral makeup exams. Please inform me via email. Booking flights before knowing test dates often results in rebooking flights.
- Class participation and homework do not influence your grade directly, but they may play an important role in determining final grades, especially in borderline cases.
- Homework will be occasionally assigned in class, also in the form of completing proofs. You are supposed to keep track of the exercises. Seriously? Yes, I do not keep a list.
- If you spot a weakness, feel free to do extra exercises, or go over the proofs explained in class. At the university, you are your own personal trainer. In particular, I am not your personal trainer. My goal is not to have each of you pass with an A. My goal is to certify to society that you are at A level in some specific math subject, in case you are, of course.
- UM says, ‘All students are bound by the Academic Integrity Policy, which is intended to promote and support an atmosphere conducive to learning. Each student’s work is to be their own unless express permission is given by the instructor.’ Parenthesis: I am the instructor, and give you this permission only for homeworks as long as you declare it on top, e.g. “solved exercise 2 with Luigi and exercises 3-7 with Mario”. I cannot give permission for tests, of course. UM says, ‘Students are bound by the policy and instructors also bound to report violations.’
- In particular, no ChatGPT, no Alexa, no Chegg, we have ways to find out. Do not ruin your academic career for a slight improvement in a grade. In case there is a concrete suspicion that a test was leaked, I may resort to oral exams for a subset of the class. If this happens, and you are selected for an oral exam, it does not mean that I am accusing you of cheating; I would select a random subset and possibly have control groups.

Tips:

- Questions and feedback during class are always very welcome. For math questions I have office hours. I receive hundreds of emails, so I typically cannot reply; nothing personal. Besides, if it is a math doubt, you can always ask me in class or in office hours.
- On day 1 you may want to write down the contact of a few classmates, so you can refer questions like 'hey what was the homework for today' to them, and not to me.
- Attendance to office hours is not compulsory, but recommended. I say this against my interests, because if nobody comes to office hours, I can relax to the sound of Frank Sinatra: Students who come to office hours every week usually make way more progress than students who show up by the dozen the day before the test.
- Tests are designed to cover the material explained in class. You are expected to keep track of the topics presented. Whatever I cover in class can be on the test (even if not in the book). Whatever I do not cover in class, cannot be on the test (even if it is in the book). I do not make 'summaries' of what I cover, but by doing summaries and by preparing cheat sheets, you learn.
- The problems in the tests are not going to be identical to problems you have already exercised on. I may want to see what you would do when facing a new challenge that can be solved with tools you already have.
- I would prefer if you do not use the computer in class. Typically, if you take handwritten notes, you perform better. The computer tends to distract both you and the students sitting behind you. That said, if this is your 'work mode' and you wish to prove me wrong, I do not mind – please sit in the last rows though, so you do not distract other students behind you.
- Zoom policy: I don't really have one. If you wish to keep your camera off, that is fine by me. The class is in person; we will only use zoom in exceptional cases, e.g. in case of storms, or if I am away for a conference.
- It sometimes happens that students find mistakes in my notes or in what I write on the blackboard. I am happy when this happens and I value corrections a lot!, that's the best way to let me know that you are on top of the subject.
- The book has many exercises. Feel free to do them on your own if you spot a weakness in your preparation.
- Cell phones and ipads are allowed in class, but must be on silent mode. Same policy for pets, kids, and lovers.

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



Bruno Benedetti
Associate Professor