

# UMassAmherst

## Introduction to Abstract Algebra I, MATH 411.03

### SYLLABUS FALL 2018

Luca Schaffler

**LECTURE:** MWF 11:15-12:05 in LGRT 145.

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**COURSE MATERIAL:** Available on Moodle.

**TEXT:** Dan Saracino. *Abstract Algebra: A First Course*. Second Edition, Waveland Press.

**OFFICE HOURS:** Tu 4-5, W 10-11 and 2-3, in my office.

**COURSE DESCRIPTION:** Math 411 is an introduction to abstract algebra, focusing primarily on the theory of groups. There will be regular problem assignments, as well as two midterms and a final examination.

**TOPICS:** The goal is to cover roughly the first half of the book (up to Rings, excluded). Topics will include groups, cyclic groups, subgroups, direct products, symmetric groups, cosets, normal subgroups, homomorphisms, and Sylow's Theorems.

**PREREQUISITE:** MATH 235, MATH 300. (The latter can be replaced by CS 250.)

**ATTENDANCE POLICY:** PROMPT, COMPLETE ATTENDANCE is expected at all classes. Please attend the ENTIRE class; this to preserve an effective learning environment for all students. Professional courtesy toward your instructor and your classmates is expected. You will be responsible for all the materials delivered in class and your final letter grade can be affected by it.

**TEST DATES:** There are two midterms and a final. The first midterm is on Thursday October 4 from 7:00 pm to 9:00 pm in ELAB 303 (Engineering Lab). The second midterm is on Thursday November 8 from 7:00 pm to 9:00 pm in GOES 20 (Goessmann). The comprehensive final exam is scheduled for Wednesday December 19 from 10:30 am to 12:30 pm in LGRT 145.

**CALCULATORS AND FORMULA SHEETS POLICY:** There is no required calculator for the course. You will NOT be allowed to use a calculator on exams. Absolutely no formula sheets, class notes, etc. will be allowed during final and midterm exams.

**GRADING:** 30% of your grade will come from the homework and participation. 20% of your grade will come from each of the two midterms. The remaining 30% will come from the final exam. The grading scale will be:

90 – 100 A, 87 – 90 A-, 83 – 87 B+, 79 – 83 B, 75 – 79 B-, 71 – 75 C+, 67 – 71 C, 63 – 67 C-, 59 – 63 D+, 55 – 59 D, 0 – 55 F. (For example, if your final score is 90, your grade will be A, not A-.)

**HOMEWORK RULES AND GUIDELINES:** Homework will be due on Friday at the start of lecture, unless otherwise stated. Late homework will not be accepted, but I will drop your lowest homework grade.

When you get stuck on a problem (and you *will* get stuck from time to time), I encourage you to seek help from me, your classmates, or other students. Many times talking with someone else will help you see a new way to approach a problem which you hadn't seen before. I especially recommend that you work with your fellow students in groups. *But*, if you are stuck on a problem and seek help from someone else, you should make sure that you can reconstruct the argument by yourself. Remember that during tests, you

will have to rely on your own understanding of the material.

Here are the rules for collaborating on homework problems:

- I. You must list the names of all people with whom you discussed each specific problem.**
- II. You MUST write your solutions completely independently.**

Part of what you will be learning in this class is how to communicate mathematics to other people, so your homework will be graded on understandability as well as correctness. Doing your homework will usually be (at least) a two-step process, where you first work out how to do it, and then rewrite your solution, getting rid of any false starts or unnecessary steps.

If in the process of doing the homework an external reference (such as a different textbook, or a website) helped you understanding the solution of a problem, then this reference needs to be acknowledged in your homework. In this case, you must write your solution independently and not just copy the resource.

Not acknowledging, or even worse copying your classmates or external resources goes against the Academic Honesty Policy, and at least will result in a zero score on the corresponding problems.

**MAKE-UPS:** There is a list of officially allowed reasons for missing a midterm or the final in the academic regulations (<https://www.umass.edu/registrar/sites/default/files/academicregs.pdf>). Apart from these reasons, make-ups are not allowed. There are no make-ups for missed homework. If the date of one of our midterms conflicts with the midterm of one of your other classes, go to the Registrar's Office and ask for a statement of conflict, which will determine which exam has priority.

**ELECTRONIC DEVICES POLICY:** *You are expected to turn off your cell phone or set it to mute/silence BEFORE you enter class—every class.* Furthermore, if you use your cell phone *in any manner* during class (e.g. text messaging, games, etc.), you will be dismissed from class and will forfeit any points you might have earned in that class period. If you use your cell phone *in any manner* during a test, you have violated the academic honesty policy. (This policy also applies to LAPTOPS, IPODS, iPADS and all other electronic communication and/or data storage devices.)

**REMARKS, NO CLASS MEETINGS AND OTHER DATES:** Questions are encouraged at all times. Please contribute as a positive member of this learning community. See the 2018-2019 Academic Calendar for holidays and important deadlines. (<https://www.umass.edu/registrar/calendars/academic-calendar>)

**ACADEMIC HONESTY POLICY:** All academic work must meet the standards contained in the Academic Honesty Policy ([www.umass.edu/honesty/](http://www.umass.edu/honesty/)). Students are responsible for informing themselves about those standards before performing any academic work. This policy defends the academic integrity of all student work, and will be uniformly applied to all students in the class.

**ACADEMIC ACCOMMODATION:** If you have a documented (learning) disability, you should contact the Disability Services. (<https://www.umass.edu/disability/>)

**DISCLAIMER:** The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary. It is the responsibility of the student to seek clarification of the grading policy and/or course requirements and procedures from the instructor.