

MTH 411: Abstract Algebra II (Fall 2019) — Course Syllabus

Instructor:	Igor Rapinchuk
Lectures:	MWF 10:20 -11:10 AM in A228 Wells Hall
Instructor's Office:	D321 WH
Instructor's Office Hours:	MW 12:30 -1:30 PM and by appointment
Instructor's e-mail:	rapinchu@msu.edu (best way to reach me)
Course Web Page:	Available through D2L

Course Materials

- Textbook: *Abstract Algebra: An Introduction, 3rd Ed.*, Thomas Hungerford, Cengage Learning, 2014: ISBN-13: 978-1-111-56962-4.
- You may also find lecture notes by Professor U. Meierfrankenfeld, available on his webpage at <http://users.math.msu.edu/users/meier/Classnotes/M411S06/M411S06notes.pdf>, to be useful. We will follow these notes more closely than the textbook for certain parts of the course.

Topics

This course is a continuation of MTH310. The plan is to cover some key topics from group theory (permutation groups, groups of transformations, normal subgroups, homomorphisms, Sylow theorems), ring theory (Euclidean domains, principal ideal domains, unique factorization domains, fields of fractions) and field theory (field extensions, splitting fields, finite fields). This roughly corresponds to Chapters 7-11 in the textbook and Chapters 1-3 in the online notes.

Departmental prerequisites

MTH 310 or equivalent familiarity with introductory abstract algebra. Note that by department policy, this course is not open to students with credit in MTH 418H.

Homework, exams, and grading

- Homework will be assigned weekly from each section of the textbook that we cover, and will typically be collected in class on Fridays; the precise due date will be indicated on each assignment. Some problems will be graded for correctness, others for completeness and neatness. Collaboration with fellow students on homework assignments is permitted and even encouraged; however, prior to discussing assignments with classmates, please attempt to solve all problems on your own. After discussion, problems submitted for grading need to be written up *individually* and *independently*, i.e. it is *not acceptable* for collaborators to copy solutions from each other. Names of any and all collaborators need to be indicated on the final version of the homework that is submitted for grading. *Late homework will not be accepted.*
- There will be **two in-class midterm exams** (tentatively scheduled for **October 4** and **November 8**) and a **two-hour final exam** (to be held on **December 13, 7:45-9:45 AM**). No notes, books, calculators, phones, or any other aids may be used on the exams. *An unexcused absence from any exam will result in a score of 0.*
- Breakdown of the final grade: Homework (25%), 2 midterms (20% each), final exam (35%).

- Anticipated grading scale (where x is your final percentage):

4.0	$90 \leq x$
3.5	$85 \leq x < 90$
3.0	$80 \leq x < 85$
2.5	$75 \leq x < 80$
2.0	$70 \leq x < 75$

Important Dates

First day of class	8/28
Labor Day (no class)	9/2
Last day to drop the class with tuition refund	9/23
Midterm 1 (in-class)	10/4 (tentative)
Last day to drop the class with no grade reported	10/16
Midterm 2 (in-class)	11/8 (tentative)
Thanksgiving break (no class)	11/28, 11/29
Last day of class	12/6
Final exam (7:45-9:45 AM)	12/13

General remarks

- Students are expected to attend all class meetings and are responsible for all material covered in class and in the homework. Any changes in this syllabus will be announced during class meetings (usually at the beginning of class). Excused absences will be given only with documentation and only for valid medical reasons, university business, or appearances in court.
- To facilitate mastery of the material, please read the current section of the textbook prior to lecture, and attempt to go through several examples and problems. Take notes and ask questions during lecture, then review your notes and the relevant textbook sections after lecture, and figure out what points are still unclear. Come to office hours regularly.
- Beyond the assigned homework problems, you should attempt as many problems in the sections we cover as you can.
- One of the best on-campus resources for getting (free) help is the Mathematics Learning Center (MLC). Please see their webpage (<https://math.msu.edu/mlc/>) for hours, locations, and other information.
- Students are expected to adhere to MSU's standards of academic integrity and the Spartan Code of Honor, as outlined in <https://www.msu.edu/~ombud/academic-integrity/index.html>.

Students with Disabilities

MSU has a Resource Center For Persons with Disabilities (RCPD): <http://www.rcpd.msu.edu/> Please contact the RCPD if you require special accommodations, and then schedule an appointment with your instructor.

Campus emergencies

If an emergency arises in this classroom, building, or vicinity, your instructor will inform you of actions to follow to enhance your safety. As a student in this class, you are responsible for knowing the location of the nearest emergency evacuation route or shelter. These directions appear on the maps posted on the walls throughout this building. If police or university officials order us to evacuate the classroom or building, follow the posted emergency route in an orderly manner and assist those who might need help in reaching a barrier-free exit or shelter. To receive emergency messages, set your cellular phones on silent mode when you enter this classroom. If you observe or receive an emergency alert, immediately and calmly inform your instructor. (See also www.alert.msu.edu)