

Math 430: Modern Algebra

Spring 2019

Instructor: Martha Precup

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Lecture: MWF at 12:00-1:00 pm in Cupples I 207

Textbook: *A First Course in Abstract Algebra, Seventh Edition*, by John B. Fraleigh

Course Content: This course is a rigorous introduction to abstract algebra. Abstract algebra is the study of formal structures that extend, bend, and sometimes break the usual rules of algebra we are familiar with. We study these formal structures both for their own sake, and because they are very useful in more familiar situations. A more detailed list of topics is available on the course schedule posted on Canvas.

Homework: Completing written assignments plays a key role in learning the material. Your homework will consist of writing up complete and correct proofs of each assigned problem. Problems will be posted on Canvas and you will submit your solutions through Crowdmark every Tuesday. **Late or illegible homework will not be accepted.**

You are encouraged to work with others, but you must write up solutions individually. If your proof is based on an idea you read or heard about from someone else, a textbook, or an on-line resource then **you must cite your sources**. You are allowed to use any resources to solve the homework provided you cite them properly. Citations are worth one point for each HW problem. TeX is the standard system for typesetting mathematics, and it is well worth your time to learn it. I will post resources on Canvas that will help you get started, and I strongly encourage you to type your homework solutions.

Presentations: Each student will give one 10-min presentation of a homework problem in class this semester. Your presentation grade will be weighted equally between your: proof, written presentation, and oral presentation. Homework problems eligible for presentation will be marked clearly on each assignment with a star (★). You can claim a problem for presentation by posting in the *presentation schedule* discussion on Canvas.

Exams: There will be two in-class exams, one on **Wednesday, February 20** and one on **Wednesday, March 27**. The final exam consists of both an in-class and take-home component. The in-class final exam will take place on **Wednesday, May 8** at 10:30am-12:30pm. The take-home component of the final exam is due on **Monday, May 6** at noon. There are no make-up exams, and attendance at the two midterm exams and final exam is expected. If you miss one midterm exam for some reason, the missed exam grade will be replaced with your final exam grade. Absences on both midterm exams or on the final exam require a documentable excuse and meeting with the professor.

Grading: Grading of all assignments is based on content and form. Your work must demonstrate your mastery of the mathematical topics and be clearly expressed. **Your lowest midterm exam score will be replaced with your in-class final exam score if this increases your grade,**

and your two lowest homework scores will be dropped. The lower bounds for letter grades are *at least* as generous as the standard grading scale. Final grades are weighted by:

Homework	20 %
Presentation	5 %
Exam 1	20 %
Exam 2	20 %
Final Exam	35 %

Preparing written assignments:

- **Both content and form count in grading.** Write in complete sentences. Make use of all relevant mathematical terms and use proper mathematical grammar.
- Your writing should be clear and concise.
- Any regrade requests must be made within a week of the assignment being returned.
- Any work submitted under your name is expected to be your own, neither composed by anyone else as a whole or in part, nor handed over to another person for complete or partial revision. **Be sure to document all ideas that are not your own.**

Preparing for class presentations:

- A presentation takes time to prepare – do not leave it for the last minute!
- Come to my office hours to practice before giving your presentation to the class.
- The purpose of the presentation is to make the ideas of the proof clear to other students. Lecture to the students, not to the professor.
- Write out the proof in detail. Understand what the key ideas are.
- Use complete sentences on the board.
- Use proper English grammar and mathematical notation.
- Explain your reasoning as you go along. Do not write everything down and then start explaining.
- Engage the audience and leave time for questions.
- Students who are not presenting are expected to participate by asking questions.

Academic Integrity: Students must comply with Washington University regulations regarding academic integrity. For more information, see: <https://wustl.edu/about/compliance-policies/academic-policies/undergraduate-student-academic-integrity-policy/>. Plagiarism is a form of cheating or fraud; it occurs when a student misrepresents the work of another as their own.

Disability Resources (DR): Special accommodations for exams are offered to students who have registered in a timely manner at Disability Resources (DR), preferably within the first two weeks for class. More information about DR may be found at: <http://disability.wustl.edu>