

Math 421 — Abstract Algebra I — Fall 2022

Instructor Contact Info: Brooke Ullery (bullery@emory.edu, MSC E416). I'll respond to your emails within 24 hours, but probably much sooner. Office hours are Tuesdays 3-4 PM (in E416) and Wednesdays 3-4 PM (on Zoom).

Class meeting times: Tue/Thur 11:30 AM - 12:45 PM, August 25–December 6 in MSC E406. Lab sessions take place on Friday; the time depends on your section.

Website: <http://www.math.emory.edu/~bullery/math421>. I'll post all of your assignments and lecture notes on the website. Canvas will only be used to input grades.

Prerequisites: The ability to write and understand proofs.

Course Overview: This course is the first semester of a yearlong introduction to abstract algebra. This semester we will focus on group theory. We will cover definitions and several examples of groups, Cayley's theorem, homomorphisms and isomorphisms of groups, Cauchy's Theorem, quotient groups and homomorphisms, and group actions. Time-permitting, we will introduce ring theory.

Text: "Abstract Algebra," 3rd edition, by Dummit and Foote. This is a fantastic, encyclopedic algebra textbook that you could well use into graduate school if you decide to take that path. We will cover only a small fraction of it in this class.

Homework: There will be homework assigned after each class. It will not be collected or graded. Instead, there will be a weekly quiz covering the homework material. The homework assignments are available on the website and will be updated after each lecture. I encourage you to work on the problems together and to come to office hours if you need help or have any questions.

Quizzes: There will be a short (10 minute) quiz at the end of each Thursday lecture, except the first day of class and the date of the midterm exam. The quiz questions will be very similar to the homework problems from that week. Notes, books, or electronic devices may not be used when taking the quizzes. Your lowest two quiz grades will be dropped. No makeup quizzes will be given. If you miss a quiz, that will be one that you drop. For extreme circumstances that impact your attendance for more than two consecutive weeks (e.g. hospitalization), contact the Office of Undergraduate Education (OUE) and Brooke as soon as possible.

Exams: The 75-minute midterm exam will take place during class on **October 20**. The final exam will be cumulative and take place on **December 13, 11:30 AM - 2:00 PM**. Notes, books, or electronic devices may not be used when taking any of the exams. Makeup exams will be given only in extreme situations, with justification verified by the OUE.

Grading: The final course grade will be calculated as follows: 35% midterm, 20% quizzes, and 45% final exam.

Honor code: Remember that copying another student's work is a violation of the Honor Code and will be treated as such.

Masks: Masks in class and office hours are encouraged, but not required by the university.

ADA and students with disabilities: In compliance with the Americans with Disabilities Act of 1990 (ADA), no otherwise qualified person with a disability be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity in the university. Please contact the Office for Disability Services, located in the SAAC building on Emory's Clairmont campus to coordinate reasonable accommodations for students with documented disabilities.