

# Math 113: Introduction to Abstract Algebra

**Instructor:** Daniel Bragg - braggdan@berkeley.edu

**Website:** [http://www.math.berkeley.edu/~braggdan/113\\_F21](http://www.math.berkeley.edu/~braggdan/113_F21)

**Lecture:** TTh 5:00-6:30 PM in 136 - Social Sciences Building

**Office hours:** In Evans 847. See course website for times.

## Course Content

Math 113 is an introduction to abstract algebra. We will cover some fundamentals of group theory, including group homomorphisms, Lagrange's theorem, permutation groups, group actions, and the Sylow theorems. We will also discuss ring theory, including ideals, ring homomorphisms, and integral domains.

## Course Structure

We will have in-person lectures twice weekly on Tuesdays/Thursdays from 5:00-6:30 PM in Social Sciences Building, room 136.

Our official textbook is "Abstract Algebra: Theory and Applications" (2020 edition) by Thomas W. Judson. This is an open source textbook which you can download for free at the following link: <http://abstract.ups.edu/download.html>. You can purchase a print copy for less than \$20 here: <http://abstract.ups.edu/purchase.html>.

## Grading

Grades will be calculated from homework scores (15%), the two midterm exams (25% each), and the final exam (35%).

## Homework

Homework will be assigned approximately weekly, and will be posted on the website. Your lowest homework score will be dropped. That is, your lowest score will not be included in your final grade.

The homework is where most of your learning will take place. It is the most important part of the class. You are encouraged to talk with other students, tutors, instructors, and so on about the homework. However, for your own sake, do be sure that you work through and understand each of the problems yourself. The goal of the homework is to gain understanding, and not just to get the right answer. If you do not understand the homework, it will be impossible to do well on the tests.

## Exams

We will have three exams: two midterms and a final. The dates will be posted on the website. Each test will be "take home" format. You will have one week to complete each exam. They are open book and open notes. You should not discuss the content of the exam with anyone else (including virtually).