General Info

Instructor: Professor David Grant, grant@colorado.edu

Office Hours: M 12:30-1:30, W 10:30-11:30, (or by appointment), in Math 303 (x2–7208).

Class Meetings: MWF 9–9:50 PM in MUEN E130

Text: A Book of Abstract Algebra (2nd Ed.), by Charles Pinter. The book is excellent, readable, inexpensive, and light. You are expected to bring it with you to every class session.

Prerequisites.

MATH 2001 or MATH 2002 and a linear algebra course from the MATH department.

About the course: A topical outline.

Abstract algebra is a collection of powerful and beautiful results that come from abstracting structures seen throughout nature and mathematics.

We will cover the basics of the most ubiquitous of these structures, groups and rings, and as time permits, fields. This includes group and ring homomorphisms (the structure-preserving maps between groups or rings), and related theorems. We will consider various applications throughout the semester, including to error-correcting codes and the theory of automata.

There is no fixed amount of material that we need to cover: our emphasis will be on your mastering the topics we cover instead of covering more topics.

Class meetings, Course requirements and grading.

This course will meet three days a week. The course will involve elements of active learning which means that instead of having a lecture for the full class time, each session will have time for you to work on problems in groups. For that reason, attendance is mandatory, and you need to bring your (light, paperback) textbook to class everyday. We will go over those problems as a class at the end of classtime.

Homework will be assigned regularly and will typically be due on Wednesdays.

There will be two inclass midterms (dates to be determined), and a final exam from 1:30-4p.m. on Tuesday, May 5, in our normal classroom. The homeworks, and each midterm, will contribute 100 points to your course grade, and the final will count for 200 points. Attendance and class participation will count for 50 points.

You are allowed (even encouraged) to work together on homework assignments, but each of you must write up the solutions separately. In good academic fashion, if you do work with someone on a problem, just be sure to say on your homework who you worked with.

Further reading

There are many wonderful books on abstract algebra, including Herstein’s Abstract Algebra, and Michael Artin’s Algebra. This course often uses A First Course in Abstract
Algebra by Fraleigh, and Contemporary Abstract Algebra by Gallian. More advanced are Dummit and Foote's Abstract Algebra, and Jacobson's Basic Algebra I.

Et Cetera:

The last day to drop a course for a 100% refund (but a fee) and without a “W” on your transcript is January 29. See https://www.colorado.edu/registrar/students/withdraw for costs associated to withdrawals after that date.

Required Syllabus Statements

ACCOMMODATION FOR DISABILITIES If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see Temporary Medical Conditions under the Students tab on the Disability Services website.

CLASSROOM BEHAVIOR Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the policies on classroom behavior and the Student Code of Conduct.

PREFERRED NAMES AND PRONOUNS CU Boulder recognizes that students’ legal information doesn’t always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors’ class rosters. In the absence of such updates, the name that appears on the class roster is the student’s legal name.

HONOR CODE All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu); 303-492-5550). Students found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the Honor Code Office website.

I will expect each student to sign the pledge of the honor code on each exam.
SEXUAL MISCONDUCT, DISCRIMINATION, HARASSMENT AND/OR RELATED RETALIATION The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct, intimate partner abuse (including dating or domestic violence), stalking, or protected-class discrimination or harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or cureport@colorado.edu. Information about the OIEC, university policies, anonymous reporting, and the campus resources can be found on the OIEC website.

Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

RELIGIOUS OBSERVANCE Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please let me know as soon as possible about any such conflicts.