

MATH 3140: Abstract Algebra 1

MWF 9:05-9:55 am, MUEN E064

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Office hours: M 12:30 - 1:30 pm, W 10 - 11 am

Course website: <https://math.colorado.edu/~mayr/teaching/math3140spring24/>

Course description. Algebra appears in the study of symmetries of objects, construction of computer chips, cryptography After a brief overview of various algebraic structures we will study the elementary theory of groups. In particular we will cover the following topics:

- algebraic structures (rings, groups,...)
- products of groups
- finitely generated abelian groups
- symmetry groups
- group actions
- Sylow subgroups

Prerequisites. Math 2001 Discrete Mathematics or a similar algebra course

Assignments. Every Wednesday I will post homework problems on the website. Please submit solutions as pdf on Canvas by the following Wednesday midnight.

You are allowed and encouraged to discuss your assignments with others. However I ask you to first try to solve your problem on your own. If you get seriously stuck, discuss it with your colleagues, me, etc. In any case write up the solutions that you hand in alone.

There is a short quiz every Monday, 2 midterm exams in class (Wednesday, February 21 and Monday, April 8) as well as a final exam (Tuesday May 7, 1:30 - 4 pm).

Cheating on your assignments may result in a grade of 0. Please find the honor code of CU Boulder here <http://honorcode.colorado.edu/>

Grading. Your final grade will be determined by the scores of your homework, quizzes, midterms, and final exam. To combine these items the following weights will be used:

Homework: 40%

Quizzes: 10%

Midterms: 25%

Final exam: 25%

There is no make-up for late homework or missed quizzes. Instead the 3 lowest homework scores and the 3 lowest quiz scores will be dropped and not count towards the final grade.

Texts. We will mainly follow

- Joseph A. Gallian. Contemporary Abstract Algebra.

University regulations. I am happy to accommodate disabilities or religious observances, or to address you with a different name or pronoun than my roster indicates. Please contact me as soon as possible.

For details on university policies please see <http://www.colorado.edu/policies>