

**Mathematics 4580: Abstract Algebra I**  
**Class Number 21392**  
**Fall 2023**

**Instructor:** Max Kutler

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**Office:** Mathematics Tower (MW) 756

**Office Hours:** Monday, Thursday, Friday 11 am–12 pm, and by appointment

**Class Meetings:** Monday, Wednesday, Friday 1:50–2:45 pm, University Hall 051

**Course Webpage:** <https://people.math.osu.edu/kutler.8/math4580>

**Canvas:** Grades and announcements will be posted to <https://osu.instructure.com>.

**Required Text:** Tom Judson, *Abstract Algebra: Theory and Applications*, 2022 edition.

The textbook is available online at <http://abstract.ups.edu>.

**Course Content:** This is the first course in the undergraduate abstract algebra sequence at OSU.

Broadly, algebra is the study of sets endowed with certain binary operations. In this course, we shall study the algebraic structures called groups, rings, and fields. Examples include the set of symmetries of a regular polygon, the set of polynomials with integer coefficients, and the complex numbers. While we will frequently think about such concrete examples, one aim of this course is to become familiar with abstract concepts and to prove theorems that apply in wide generality.

A strong emphasis will be placed on communicating mathematics clearly and effectively, especially in writing.

**Homework:** There will be **two homework assignments due each week**. Problem sets will typically consist of two to four exercises. Solutions must be written clearly, legibly, and with appropriate style. Among other things, this means your work should include proper grammar, punctuation, and spelling. You should use fresh, clean standard letter-size paper ( $8\frac{1}{2}'' \times 11''$ ) in the standard orientation, and leave at least a 1'' margin on all sides. You are expected to write a draft of each of your solutions before writing the final, edited form. I recommend *Guidelines for Good Mathematical Writing* by Francis Su as a basic style guide.

You are encouraged to discuss the homework with other members of the class. If you do so, **you should acknowledge their assistance** on your submitted homework. Furthermore, you should feel free to use sources beyond your textbook, personal notes, and past homework when crafting your solutions. **You must, however, cite any such sources, and you must write up all of your final solutions on your own.**

Graded homework may in some cases be rewritten and resubmitted at a later date. Details about these “rewrites” will be given in class. This policy is intended to provide an opportunity to solidify your understanding of the key ideas you will encounter throughout the course. You are therefore strongly encouraged to take advantage of the opportunity to submit rewrites of your graded homework.

**Grading:** Your grade will be based on homework, and three exams. Whichever of these four components receives the highest score will count for 40% of your course grade; the remaining three components will count for 20% each.

**Exams:** There will be two in-class midterm exams and a comprehensive final exam.

1. Exam 1: **Friday, September 22**
2. Exam 2: **Friday, October 27**
3. Final Exam: **Wednesday, December 13, 2:00–3:45 pm**

**Attendance:** Regular attendance is expected and is vital to success in this course. While you will not be explicitly graded on attendance, repeated absences will likely impact your ability to keep up with the course material. If you must miss a class due to illness, university event, or other reason, please email [kutler.8@osu.edu](mailto:kutler.8@osu.edu) with appropriate documentation.

You are responsible for all announcements made in class, as well as any emails sent to your OSU email account and announcements posted to Carmen.

**Special Accommodations:** The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. **SLDS contact information:** [slds@osu.edu](mailto:slds@osu.edu); 614-292-3307; [slds.osu.edu](http://slds.osu.edu); 098 Baker Hall, 113 W. 12th Avenue.

**Academic Misconduct:** It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-48.7). For additional information, see the Code of Student Conduct at <http://studentlife.osu.edu/csc/>.

**Changes to this Syllabus:** A current version of this syllabus may be found at the course webpage. This is the syllabus as of August 22, 2023.