Math 4107 Abstract Algebra I - Fall 2026

Class: TR 2:00-3:15pm EngSci & Mechanics Room 202

Instructor	Jonathan Zung
Office	Skiles 222
E-mail	jzung3@math.gatech.edu (Please put MATH4107 in the subject of any e-mails. Thanks!)
Office Hours	(tentative) Tuesdays 3:15-4:30pm, Wednesdays 4pm-5pm

Course website: `http://canvas.gatech.edu`

Textbooks There is no required textbook for the course, but here are several resources I like:

- *Algebra* by Michael Artin
- *Concrete Abstract Algebra: From Numbers to Gröbner Bases* by Niels Lauritzen
- *Contemporary Abstract Algebra* by Joseph Gallian

Prerequisites: A course on proofs, either Math 2106 (Foundations of Mathematical Proof) or Math 2740 (Foundations of Mathematics and Computing)

Course synopsis: This course will give an introduction to abstract algebra. We will study three algebraic structures which appear all over mathematics: groups, rings, and fields. I will keep a rough schedule of the class here: `https://docs.google.com/spreadsheets/d/1hXr5IPiXiSaXyrKQxJjCMJa6C-3WPnxDl3MZgGmDC_U/edit?gid=0#gid=0`.

Homework: There will be weekly homework sets. I highly encourage you to work with other students on the homework, but you must write up your problem set solutions on your own and include the names of all collaborators. **Late homework will be accepted for three days after the due date, with a 20% penalty.** Your lowest homework score will be dropped. Homework will be submitted via Canvas.

AI use policy: AI can be a very useful learning tool. It can also be a crutch to learning. I trust you to make decisions on how best to use AI to aid your learning. Some recommendations: First, give an honest attempt at all the homework problems without any assistance. Second, if you are stuck, I recommend working with other students or coming to office hours. This is fun (for me too!) and improves your mathematicial communication skills. Third, if you want to use AI tools, experiment with prompts indicating that you just want a push in the right direction, eg "I am a student learning group theory. Here is what I've tried on this problem. Do not give me the answer, just give me a hint in the right direction." **You must submit all logs from AI tools used during completion of your homework.** This is rapidly becoming standard practice in AI assisted research mathematics. It also helps me to see what concepts you are struggling with so that I can review them in class.

Comprehension Quizzes: We will have quizzes in class, roughly every other week. These will be short ($\sim$ 15 minutes) and closely related to the homework. They are meant to be a quick check-in for your understanding.

Exams: There will be two exams during the usual class time and a final exam. The exams are tentatively scheduled as follows:

- Exam 1: September 29, during class
- Exam 2: November 5, during class

- Final Exam: December 10, 2:40pm - 5:30pm

Grading: Your final grade will be computed as follows:

Homework	20%
Comprehension quizzes	10%
Exam 1	20%
Exam 2	20%
Final Exam	30%
TOTAL:	100%

Up to 6 bonus marks are available for **good deeds**. These include presenting solutions in class, creating illustrations for important concepts, etc. Come talk with me to discuss any proposals for good deeds. There is no curving on individual assignments - all results are recorded as numerical scores. The final grade cutoffs will not be established until the end of the semester and they will be based on the overall score distribution, as well as historical grade distributions for the course. Cutoffs will not be set higher than the standard ones (90 for A, 80 for B, 70 for C, 60 for D), but they may be lowered, depending on the difficulty of the assignments.

Absences: You may make up an exam that you missed due to an institute sanctioned excuse or a religious holiday, provided that you email me at least a week before the exam to schedule a make-up. All other make-up exams will be determined on a case-by-case basis.

Regrades: If you believe your homework or exam has been graded incorrectly and would like a regrade, your request must be submitted within 1 week of the return of paper.

Academic Integrity: All students are expected to comply with the Georgia Tech Honor Code (see `http://honor.gatech.edu` and `http://www.policylibrary.gatech.edu/student-life/academic-misconduct`).

Students with Disabilities and/or in need of Special Accommodations: Georgia Tech complies with the regulations of the Americans with Disabilities Act of 1990 and offers accommodations to students with disabilities. If you are in need of classroom or testing accommodations, please make an appointment with the ADAPTS office to discuss the appropriate procedures. More information is available on their website, `http://www.adapts.gatech.edu`. Please notify me of any accommodations needed at least 1 week in advance.

Respect and responsibility: I will put an honest effort into making the classroom a positive and respectful environment conducive to learning, and I trust that you will do the same. See also the student-faculty expectations here: `https://catalog.gatech.edu/rules/21/`.