

Math 2106 – Summer 2026

Foundations of Mathematical Proof

Instructor: TBA

Course Description:

An introduction to proofs in advanced mathematics, intended as a transition to upper division courses including Abstract Algebra I and Analysis I.

Learning Objectives:

Students will learn to communicate effectively in the mathematical language, which has its own set of vocabulary and grammar. Students will be able to read and write rigorous proofs and discuss mathematics with their peers. Student will learn some fundamental mathematical concepts including basic set theory, propositional logic, relations, functions, and cardinality of sets, as well as basic concepts in group theory and analysis.

Course Materials:

Our textbook is the free open educational resource [Book of Proof by Richard Hammack](#). There will be additional material on set theory, group theory, and analysis, which will be posted on Piazza under Resources.

In-class practice and Group work:

Class discussion solidifies understanding, clarifies misunderstandings, and provides immediate feedback. There will be in-class assignments during most class meetings. I expect every student to come to class prepared and actively participate in discussions. You will randomly assigned to groups of 5 or 6 people. We may re-assign the groups every few weeks.

At-home practice (homework):

The purpose homework is to practice the new skills and concepts. Part of the homework will be online via the WeBWorK, accessible from Canvas, approximately every week.

In addition, written homework assignments will be assigned and collected on a regular basis, approximately every two weeks. It is due on Gradescope at 9am on the due date, before class. A random selection of problems will be graded carefully and the rest will be graded for completeness. The lowest WeBWorK and the lowest written homework will be dropped. Some homework assignments will be due on the final instructional days of the semester.

Late homework policy:

I will accept late written homework with 25% penalty for each late day, for up to two days, i.e. being 1-24 hours late (rounded up) will get you 75% credit and 25-48 hours late will get you 50% credit. No late work will be accepted for WeBWorK.

In-class quizzes (individual and group):

On every written homework due date, at the beginning of the class you will individually take a multiple-choice quiz on the material from the homework. Right after the individual quiz, you will take the same quiz with your group. When you have finished, your team may appeal a wrong answer if you feel that you have missed the question because it was worded ambiguously or the answer key was incorrect. Appeals must be done immediately following the group quiz. One lowest individual quiz and one lowest group quiz score will be dropped. No make-up quizzes will be given.

Exams:

There will be two in-class individual exams and a final exam. Dates will be announced via Canvas at the beginning of the semester. Notes, books, and calculators are not allowed.

Grades:

Your final grade will be computed as follows:

- Written homework: 10%
- WeBWork: 5%
- Individual quizzes: 5%
- Group quizzes: 5%
- Exams (25% each): 75%

The usual grading scale will be used: at least 90% for A, 80% for B, 70% for C, and 60% for D.

Regrades:

Any request for regrading homework or exams must be submitted within one week of when the papers are returned on Gradescope. After one week, all grades are final. It is your responsibility to check your grades regularly.

Missed exams:

No make-up exams are scheduled. In case of a documented excused absence due to sickness or an institute sponsored event, such as an intercollegiate sports competition, grade distribution may be changed (e.g. an exam may be substituted with the average of the other two exams). If you miss an exam due to family or medical emergency, please ask the Office of the Dean of Students to send me a note.

AI policy:

You are not allowed to use artificial intelligence or other online resources to solve homework problems before they are due. Doing so will be regarded as a violation of Georgia Tech Academic Honor Code. Outsourcing your thinking to AI is giving up your agency to think and reason and be a human being. It is also cheating yourself out of a practice opportunity, and you will miss out on the joy of discovering the solutions yourself. AI and online resources may be used for supplemental learning that is not directly related to the homework assignments. However, keep in mind that they can be wrong, or they may rely on concepts not yet covered in class.

Collaboration policy:

You are encouraged to discuss the homework problems and solutions with your classmates, with the TAs in Math Lab, and with me in office hours, but only after you have put in a good attempt yourself. Do as many problems as you can by yourself before consulting others. Some struggle is expected and is necessary in learning mathematics. However, if you don't understand a problem or if the wording is unclear, then please do ask for clarification. Piazza is good for that.

You must write up your own solutions independently, i.e. you must not be looking at any sources other than the textbook and your own notes while writing your solution. Write clearly in complete sentences. If you use other people's ideas, then state this on the homework.

Classroom Decorum:

Out of respect for your classmates and our learning environment, please arrive to class on time every day. Do not use cell phones, laptops, tablets, or other electronic devices in class, except for note-taking, in which case the devices must be lying flat on the desk. Additional standard expectations as outlined in the [Student-Faculty Expectations Agreement](#) apply.

Accommodations for Students with Disabilities:

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404- 894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Academic Integrity:

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech's [Academic Honor Code](#) and the [Student Code of Conduct](#). Any student suspected of cheating or

plagiarizing on an assignment, quiz, or exam will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.