

# Math 4150 Syllabus, Fall 2026

April 12, 2026

**Meeting time and place:** Tuesday and Thursday, 9:30pm to 10:45pm room TBD.

**Instructor:** Ernie Croot

**Email:** [ecroot@math.gatech.edu](mailto:ecroot@math.gatech.edu)

**Office:** 103 Skiles (could change once math department moves to a new building)

**Office hours:** I will have office hours at my office on Monday from 1:00pm to 3:00pm. I also will answer questions via Ed on Canvas.

**Textbook and course materials:** *Elementary Number Theory, and its applications, sixth edition* (please don't ask me for how the 6th edition differs from the others; I don't know).

We will attempt to cover as much as possible, up to and including chapter 11.

In addition, I may post some practice exams, when it gets close to time to take the midterms and final. I taught this course last spring, so have a small bank of exams.

**Course goals:** Our goal for this course is twofold: (1) To train you in how to approach various number-theoretical problems (how to guess the difficulty; how to apply heuristics to guess answers; and what methods one should use, including e.g. induction or some more "global" approach); and, (2) Make sure you have a well-rounded education in basic terminology, principles, and applications of number theory (e.g. in solving systems of congruences).

**Course requirements and grading:** I will assign about 5 or 6 homeworks this semester, collected about once every 2 weeks (the first HW won't be due until the third week). The homework will count 30% of your final grade. There will also be two midterm exams, each adding up to 20% of your grade. And there will be a final exam, for an additional 30% of your grade. Your final grade will thus be computed according to the formula:

$$FG = 0.3 \times (HW1 + HW2 + \dots + HW5) / 5 + 0.2 \times (CMT1 + CMT2) + 0.3 \times (CFE).$$

Here, CMT1 and CMT2 mean "curved midterm 1 and midterm 2" scores out of 100 points; and, CFE means "curved final exam" score out of 100 points. The "curve" will work as follows: I will compute the median for the class for the particular exam. If the median is less than 75, I will add to everyone's score  $x$  points (the same number of points added to all exams), in order to bring the median up to 75. So,  $x = 75 -$  (initial class median).

**Note that this means the curve cannot harm you. It can only HELP you. I will not lower anyone's grade with a curve!**

**Also note that Canvas sometimes tries to be a little too helpful, and tells you what your average course grade is. Don't trust it! And compute it yourself, instead. What Canvas does in computing this number is to average homeworks and exams equally; however, as you can see, they should have different weights.**

In addition to this, I will implement a "maximal grading policy" at the very end. The way this would work is that I would compute

$$FG^* = \max(FG, CFE).$$

That is, if you did better on the final exam (with curve) than you did on all the exams and homework, then you keep the grade for your final exam. The  $FG^*$  is what I use to compute your letter grade.

Letter grades will be assigned as follows:

$$\begin{aligned} FG^* &\geq 89.5 \longrightarrow A \\ 79.5 &\leq FG^* < 89.5 \longrightarrow B \\ 69.5 &\leq FG^* < 79.5 \longrightarrow C \\ 59.5 &\leq FG^* < 69.5 \longrightarrow D \\ FG^* &< 59.5 \longrightarrow F. \end{aligned} \tag{1}$$

**Attendance and/or participation:** I think it is a good idea to attend the lectures, to work the homework problems on your own, and to read the relevant parts of the text when preparing for the exam, as well as read whatever supplementary materials will be posted to the course website. I likely will not take attendance every day.

**Exam Dates:** The first exam will be on Thursday, October 1. And the second exam will be on Thursday, November 19.

**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. For information on Georgia Tech's Academic Honor Code, please visit

<http://www.catalog.gatech.edu/policies/honor-code/>

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

**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.

**Student-Faculty Expectations Agreement**

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The [Student-Faculty Expectations](#) articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.