

Instructor: Christy Hazel
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Office Hours: MW 3–4 ¹
& by appointment

TA: Jianming Wang
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TA Office Hours: TBA

Class meetings: 2:00-2:50PM MWF in Mathematical Sciences 5117

Discussion meetings: 2:00-2:50PM Th in Mathematical Sciences 5117

Textbook: J. H. Silverman, *A Friendly Introduction to Number Theory*, 4th Ed.²

Prerequisite: Math 110A

Course objectives: This course serves as an introduction to various topics in number theory. Simply put, number theory is the study of properties of the positive integers. Many of the questions asked in number theory are simple to state, but the tools needed to answer these questions can be deep and mysterious. In this class we will cover topics such as the fundamental theorem of arithmetic, congruences, Fermat’s little theorem, Dirichlet’s theorem, different families of prime numbers, Pell’s equation, and Diophantine approximation. We may also cover topics such as Gaussian integers and/or elliptic curves, depending on time availability and class interest.

Communication: A Campuswire is set up for this course (see the page “Campuswire” on Canvas for how to access the Campuswire), and I encourage you to make use of this to ask any mathematical questions. You should also utilize the our office hours for math questions—this is our designated time to help you, and I’m always happy to see students in office hours! If you have a question about course policy, then you should first see if the answer to your question is in this document. If not, please email one of us.

Grading: Course grades will be weighted according to the following scheme:

Presentation	11%
Homework (8)	24% (3% each)
Midterm Exams (2)	31% (15.5% each)
Final Exam	34%

Standard letter grade assignments will be made. Plus and minus grades will be awarded in the upper and lower 3% of a bracket (e.g. anything in the interval $[87, 90)$ is a B+). I reserve the right to apply a course adjustment to grades at the end of the term. If there is any curve, it will happen at end of the term and will only benefit students (so for example, if you earn an 85%, you are guaranteed at least a B, regardless of the curve). Though, you should not expect there to be any curve on this class.

¹These may change depending on responses to the Welcome Survey on Bruin Learn.

²You can get an earlier edition, but note homework problems will be assigned using the 4th edition.

Homework: Homework will be assigned each week on the course website, starting in Week 1. The homework will be due the following Friday, except on exam weeks when the homework will be due the Monday after that Friday (so you'll have a few extra days to work). You will turn in the assignment on Gradescope. No late work will be accepted and no extensions will be given.

With that said, I do recognize outside factors (illness, stressful week, personal problems, etc.) can come up that prevent you from turning in an assignment or completing the problems to the best of your ability. To account for such things, *your lowest homework grade will be dropped*. This allows everyone to miss one assignment without penalty. You do not need to email us to let us know why you are missing an assignment. If an exceptional situation arises that is requiring you to miss more than one assignment, then you should contact me as soon as possible so we can discuss your options.

Presentations: Each student will give one 5–10 minute presentation at some point during the term. On each of the weekly assignments, there will be some problems marked as possible presentation problems. We will have a sign-up sheet so you can decide which problem you would like to present. On every third Friday (Weeks 3, 6, and 9), we will use lecture time for presentations. You will have a lot of support leading up to the presentation, and this is intended to be a positive learning experience as opposed to a stressful ordeal. The point of these presentations is to give you practice presenting mathematics in front your peers, and to let you hear how your peers approach mathematical questions. More information will be posted about presentations in Week 2.

Exams: There will be two midterm exams and one cumulative final exam. The midterm exams will take place on **Thursday, April 21** (Week 4) and **Thursday, May 12** (Week 7). The exams will take place during our usual discussion time in our usual classroom. The final exam will be **Wednesday, June 8** from 8am-11am. The location is TBD and will be announced by Week 10.

University Resources

Student Conduct: All students are expected to adhere to the [Student Conduct Code](#).

Title IX: Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the CARE Advocacy Office for Sexual and Gender-Based Violence, 1st Floor Wooden Center West, CAREadvocate@careprogram.ucla.edu, (310) 206-2465. In addition, Counseling and Psychological Services (CAPS) provides confidential counseling to all students and can be reached 24/7 at (310) 825-0768. You can also report sexual violence or sexual harassment directly to the University's Title IX Coordinator, 2241 Murphy Hall, titleix@conet.ucla.edu, (310) 206-3417. Reports to law enforcement can be made to UCPD at (310) 825-1491.

Accessibility: If there are accommodations that can be made to better facilitate your learning, please feel free to reach out to the instructor or to the [Center for Accessible Education](#).