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CONTACT INFO

| Paul Tokorcheck | 257 KAP | tokorche@usc.edu | webpage |

I will have dedicated "**office hours**" via Zoom each **Thursday from 12-2pm PST** through this Zoom link. If you can't meet at that time just let me know and we can make other arrangements.

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COURSE DESCRIPTION

Introduction to the theory of numbers, including prime factorization, congruences, primitive roots, N-th power residues, number theoretic functions, and certain diophantine equations. (4 units)

Our goal is to work through Chapters 1-9 of our required textbook: Burton's Elementary Number Theory.
Another classic textbook (optional) is Introduction to the Theory of Numbers by Hardy and Wright.
A newer book with a more visual approach (optional) is An Illustrated Theory of Numbers by Weissman.

REQUIRED SETUP

Our course will use the following online systems:

- **Blackboard** as the main hub for all communication, links, and course materials
- **Zoom** for lectures, discussions, office hours, and exams
- **Gradescope** for all written work submissions and grading

You will access the latter systems through links in our Blackboard page and none of them should require separate logins. We'll work through the initial setup in our first lecture. All are free - you should only need to purchase a textbook.

For all live **Zoom** sessions you will need a camera, microphone/speakers, and a stable internet connection. If any of this is an issue you can also use the free Zoom app for cell phones and tablets.

All written assignments will be handled through the **Gradescope** link in Blackboard.

You will need to submit your documents to Gradescope in PDF format. There are many free phone apps that you can use to scan your work, including Adobe Scan and others. During the submission process you must tag each question so the grader can find it.

Our **textbook** is a fairly standard introduction to Number Theory that includes a good amount of historical background for each new topic. You shouldn't need any special preparation apart from basic arithmetic skills and enough mathematical maturity to write proofs.

We will collect the exercises from the textbook one chapter at a time (9 assignments total) with each submission due on a **Friday at 11pm PST**. But you are expected to do problems every day and stay ahead of the due dates. The list of exercises will be posted in Blackboard.

Any exercises submitted after their due date will receive **half-credit**, regardless of circumstances.

DAILY LOGISTICS

We will meet each Mon/Wed/Fri at **11-11:50am PST**.

These meetings will be less like traditional lectures and more of "reading seminar" format. We'll all be reading through the textbook at approximately the same pace. We'll meet to discuss the current content and our understanding/impressions and to practice both our **reading** and our **writing** of proofs.

- We practice reading by breaking down some existing proofs, either from our textbook or elsewhere.

- We practice writing by trying to prove new statements ourselves, and getting feedback from our peers.

At each meeting I will leave you with a short problem or proof, due in Gradescope at **11pm PST** that day. These are very informal assignments that I will (quickly) read myself and grade on a scale of 0-3. This provides an avenue for quick and constant feedback in both directions. Late work will not be accepted, but we will drop the lowest **12** scores.

Zoom etiquette: Plan to be logged in **on time** and stay for the entire hour. Have your **camera on** for all Zoom meetings. For audio, it helps to have your own **microphone muted** until you want to speak or ask a question. Most people will have a fan or music or roommates or a lawn mower going in the background and all of this ambient noise adds up.

EXAMS AND GRADING

There will be three exams given on the following dates:

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Exam 1: Friday, 19 February

Exam 2: Friday, 26 March

Final Exam: Final's Week Schedule

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The format of the exams is yet to be determined; you'll get more information as the exam dates approach. Your grade for the course will be calculated according to the following proportions:

- Classwork: 15%

- Homework: 15%

- Midterms: 20% each

- Final: 30%

IMPORTANT POLICIES AND LINKS

Policy on academic dishonesty: Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. You should familiarize yourself with the Student Conduct Code and particularly with the section on Academic Integrity.

Other forms of academic dishonesty are equally unacceptable. For example, see the university policies on scientific research misconduct.

Disability Services: Any student requesting accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. Once verified with them, you will be able to log into their portal and generate a new "accommodations letter" specific to our course. Please email me a copy of this letter as soon as possible.

Notetakers: I often have requests from DSP for well-organized students who are willing to make their class notes available to approved DSP students. The DSP Office typically pays a nominal amount to the notetaker for their trouble. If you are interested in doing this you can learn more here.

Campus Wellbeing & Crisis Intervention: A one-stop shop that addresses concerns and questions and provides support, trouble-shooting, threat assessment, advocacy, education, crisis response, and referrals.
https://cwci.usc.edu/

Equity, Equal Opportunity, and Title IX: Where to find resources for issues of harassment, discrimination, microagressions, the rights of protected classes, etc., and get advice on reporting options.
Business-hours hotline: 213-740-9355
https://studenthealth.usc.edu/counseling/

Counseling and Mental Health: Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. There are also specialists to provide immediate therapy services for situations related to gender- and power-based harm (e.g., sexual assault, domestic violence, stalking). All services are confidential.
24/7 hotline: 213-740-9355
https://studenthealth.usc.edu/counseling/

National Suicide Prevention Lifeline: Provides free and confidential emotional support to those in suicidal crisis or emotional distress.
24/7 hotline: 1-800-273-8255
www.suicidepreventionlifeline.org