Introduction to Number Theory

Fall 2024

Time:	MWF 9:00 – 9:50	**Place:**	Barus & Holley 155
Office:	Kassar House 014	**Office Hours:**	TBD

Course Pages:

1. https://weizhining.github.io/Teaching/math420/math420.html

Instructor: Zhining Wei zhining_wei@brown.edu
TA: Nathan Smith nathan_smith@brown.edu

Office: Kassar House 014
Office Hours: TBD

Main References:

- (Textbook) Joseph H. Silverman, *Friendly Introduction to Number Theory,*, Pearson, 4th edition, 2018. ISBN: 9780134689463.
- Lecture notes

Course Descriptions: An overview of one of the most beautiful areas of mathematics. Ideal for any student who wants a taste of mathematics outside of, or in addition to, the calculus sequence. Topics include: prime numbers, congruences, quadratic reciprocity, sums of squares, Diophantine equations.

Prerequisites: No prerequisites.

Tentative Course Outline:

- Introduction;
- Divisibility, prime numbers and fundamental theorem of arithmetic;
- Congruences;
- Quadratic Reciprocity, sum of two squares and sum of four squares;
- Diophantine equations: Fermat's last theorem;
- Diophantine equations: Pell's equations.

Grading Policy: Homework (70%), Final (30%).

Academic Integrity:

- The instructors of this course take Brown's Academic Code, and academic integrity in general, very seriously. Submitting dishonest work, whether on homework or exams, makes it more difficult to effectively help you and your fellow students learn, and it dilutes the meaning of a Brown degree. It is your responsibility to understand what actions are allowed in this course, and what actions are violations of the Academic Code. Any incidents that appear to violate course rules will be presented to, and adjudicated by, the university's Academic Code committee.

Inclusivity and Nondiscrimination:

- This course strives to be accessible and inclusive to all students, regardless of age, race, nationality, gender identity, sexual orientation, religion, and economic background. We are committed to conducting all interactions with students with a sense of respect and equity. We ask that students interact with other students and instructors in this same spirit. If something happens to make you feel unwelcome or discriminated against, please bring it to our attention so that we can respond accordingly. In addition, Brown is committed to providing support for students with learning differences, physical impairments, and other disabilities. If you think you may need accommodations due to one of these conditions, please contact Student Accessibility Services for more information.