

Number Theory

MTH 449/549, Fall 2021

Professor: J. J. P. Veerman

Class meets: TR 14:00 - 15:15, TBA (zoom).

Office: FMH 464B (503-725-8187)

Office Hours: TR 15:15 - 15:45, or by appointment.

Email: veerman@pdx.edu

Web Page: <http://web.pdx.edu/~veerman/>

Text: J. J. P. Veerman, *An Introduction to Number Theory*, free Lecture Notes available through http://web.pdx.edu/~veerman/0_mainfile.pdf. These notes will be updated periodically.

General Description: We cover topics like rational and irrational numbers, countability, unique factorization, the Euclidean algorithm, Möbius inversion and the totient function, modular arithmetic, Fermat and Mersenne primes, the theory of continued fractions, and elements of algebraic number theory.

Background: Prerequisites: MTH 346.

Grading: Your course grade will be based on two midterm homeworks or exams (each 30%) and a final homework or exam (40%). Not all assigned homeworks will be graded. Exams (if any) will be based on the theory and all past homeworks. Homework is an essential part of the learning experience. Do your homework (even if it will not be graded) to acquire necessary skills and insights. Extra quizzes or homework may be given at any time, if the need arises. All answers on any work you turn in (homeworks, quizzes, or exams) must be justified, even if that is not evident from the phrasing of the question. Answers without justification will receive partial credit at best. Before turning in exams or homeworks, write your first plus last name in the top right corner of each sheet you turn in (even if you staple them together)! Assignments and grading criteria are separate for undergraduate and graduate students.

Attendance: You are expected to attend classes. Homeworks, changes to this syllabus or to the scheduling of exams will be announced in class. If you have to miss class, it is your responsibility to find out what happened in class from your classmates.

Homework: As material is covered in class, a list of accompanying homework will be assigned. Reading the text and completing the homework is essential to your success in this course, and it will likely require a substantial amount of time and effort on your part to complete it successfully. You may find it helpful to form a study group with 2-5 other students and work together outside of class on the assignments. However, each student must write up and submit his or her own work. Plagiarism from either the web, your colleagues, or any other source is unacceptable at Portland State, and cases may be referred to the Dean of Students for action. Homework (if due) must be turned in on the due date *at the beginning* of the class. ***HW 10 minutes late or more will not be accepted, except in cases governed by university guidelines (illness, etc).***

Exams: If given, exams or quizzes are cumulative and will cover all assigned exercises and theory. Final date: Thursday: 13:00 - 14:50 (last day of class).

Access and Inclusion for Students with Disabilities: PSU values diversity and inclusion; My goal is to create a learning environment that is accessible, equitable, inclusive, and welcoming. I am committed to fostering mutual respect and full participation for all students. If any aspects of instruction or course design result in barriers to your inclusion or learning, please notify me. Additionally, the Disability Resource Center (DRC) provides reasonable accommodations for students who encounter barriers in the learning environment. The DRC works with students who have physical, learning, cognitive, mental health, sensory, and other disabilities.

If you have, or think you may have, a disability that may affect your work in this class and feel you need accommodations, contact the Disability Resource Center to schedule an appointment and initiate a conversation about reasonable accommodations.

If you already have accommodations, please contact me to make sure that I have received your faculty notification letter from the DRC so we can discuss your accommodations.

The DRC is located in 116 Smith Memorial Student Union, Suite 116. You can also contact the DRC at 503-725-4150 or, drc@pdx.edu. Visit the DRC online at <https://www.pdx.edu/disability-resource-center>.

Title IX Reporting Obligations:

As an instructor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. Please be aware that as a faculty member, I have the responsibility to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination. If you would rather share information about sexual harassment, sexual violence or discrimination to a confidential employee who does not have this reporting responsibility, you can find a list of those individuals or contact a confidential advocate at 503-725-5672. For more information about Title IX please complete the required student module Creating a Safe Campus in your D2L.