

MAST 699 (MAST 833), Sec. DA
Topics in Number Theory – Diophantine Analysis
Fall 2023

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Office Hours: TBA.

Class Schedule: Tuesdays, 17:45-20:15. The term will be 12 weeks in length, with the midterm break from Tuesday, October 10th to Sunday, October 15th. Monday, October 9th, the university will be closed due to Thanksgiving Day.

Topics: This course centers around the proofs of central finiteness results in arithmetic. We will start from scratch from the basic notion of heights on varieties and basic properties thereof. Among other topics, we will go through the proof of the finiteness of the number of solutions to integral and rational points on higher genus curves (Faltings' theorem): in the latter case we will present the proof of Vojta in the version given by Bombieri. One of the main references will be the book of Bombieri–Gubler "Heights in Diophantine Geometry". A more detailed outline with a webpage for the course will follow shortly.

Final Exam: The final exam will consist of presentations on selected topics, which we will agree on towards the end of the course.

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