



Direzione Ricerca,
Innovazione e
Internazionalizzazione

**UNIVERSITÀ
DI TORINO**

ID

VP_149_MAT

Visiting Professor Program Academic Year 2025/2026

TEACHING COMMITMENT: 24 hours

COURSE TITLE

Infinitary Combinatorics

TEACHING PERIOD

II semester

SCIENTIFIC AREA

Mathematical Logic

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

A major topic in set theory is the study of infinite objects. We will introduce combinatorial principles such as stationary reflection, Aronszajn trees, and how they interact with cardinal arithmetic (e.g. CH, SCH) and large cardinals. Then we will go over some forcing applications to the combinatorics at $\aleph_2$. Finally, we will cover combinatorics at successors of singulars, in particular at $\aleph_{\omega+1}$. We will also discuss some recent developments and open problems at the end.

LEARNING OBJECTIVES

Students will learn about large cardinals, cardinal arithmetic, and their relation to stationary reflection and the tree property. They will also become familiar with forcing posets, such as Prikry forcing, Mitchell forcing, and forcing techniques to collapse and singularize cardinals.

OTHER ACTIVITIES BESIDE THE COURSE

VISITING PROFESSOR PROFILE

The ideal candidate will be a professor in Mathematical Logic specializing in set theory, infinitary combinatorics, and the combinatorics of successor of singular cardinals, established through research publications, teaching, and student supervision.

CONTACT REFERENT

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