UNIVERSITÀ
DI TORINO

ID

VP078_MAT

Visiting Professor Program
Academic Year 2024/2025

TEACHING COMMITMENT: **20 hours**

COURSE TITLE

Logic, Models and Games

TEACHING PERIOD

2nd term

SCIENTIFIC AREA

Mathematical Logic

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

This course discusses various logics that have been developed in mathematics and computer sciences, for various purposes. This includes of course the first-order logic FO, the basis of classical model theory, abstract logics, as well as logics that are weaker than FO and can be used to study finite models.

The aim is to find common ground and develop a machinery to compare logics. Moreover, keeping the paradigm case of FO as the grail of the universe of logics, an additional objective is to study what properties of this logic can and how they can be transferred to other cases. And if not, why is this the case?

This is an attempt to answer the question of what is a logic, after all.

The course will have elements of set theory, model theory, finite model theory, and category theory.

LEARNING OBJECTIVES

- Abstract logics;
- Chu transforms;
- Difference between finite and infinite models;
- Transfer principles in logic;
- Caracterisation of first order logic.

VISITING PROFESSOR PROFILE

Professor in Mathematical Logic with interests within set theory, model theory, and finite model theory, as well as applications to computer science, established through research publications, teaching, and student supervision.

CONTACT REFERENT

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