UNIVERSITÀ
DI TORINO

ID

VP081_MAT

Visiting Professor Program
Academic Year 2024/2025

TEACHING COMMITMENT: **16 hours**

COURSE TITLE

Stochastic Processes

TEACHING PERIOD

2nd term

SCIENTIFIC AREA

Probability

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

Continuous time stochastic processes with special emphasis on diffusion processes. The initial part includes the study of Brownian motion and its main properties. The second part presents one-dimensional diffusion processes and their first passage times through boundaries. The course program includes examples of diffusion approximation, examples of real instances modelled through diffusions and basics notions about simulation of diffusions. According with the period of presence in Torino, the visiting will specialize his/her lessons on a different part of the program.

LEARNING OBJECTIVES

Good knowledge of the theory of diffusion processes. The student will learn how to model real instances through diffusion processes, how to study the obtained model and its goodness through the development of modelling skills and using rigorous mathematical tools. The student will learn the main simulation methods with their properties.

Development of software to test algorithms (if there will be enough time).

OTHER ACTIVITIES BESIDES THE COURSE

At least one research seminar of interest for PhD students.

VISITING PROFESSOR PROFILE

The optimal candidate has a strong scientific record, with papers on excellent probabilistic journals. Furthermore, the candidate is expert in teaching advanced probabilistic topics.

CONTACT REFERENT

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