UNIVERSITÀ DEGLI STUDI DI TORINO

ID

VP122_DIP_MAT

Visiting Professor Program
Academic year 2022/2023

TEACHING COMMITMENT: 16 hours

COURSE TITLE

Stochastic Processes

TEACHING PERIOD

2nd term

SCIENTIFIC AREA

Probability

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

Introduction to diffusion processes. Brownian Motion and its features (Brownian Motion as Gaussian process, as Markov process, as a Martingale, Arcsin Law, Iterated logarithm law, properties of the sample paths). Diffusion processes as continuous time and space Markov processes; some functionals of diffusion procecesses; Kolmogorov equations (backward and forward); classification of the boundaries and boundary conditions. Diffusion approximation of discrete time-space Markov processes; First Passage time problems. Simulation of diffusion processes.

LEARNING OBJECTIVES

Learn basic properties of Brownian Motion and Diffusion processes. Developing modelling skills and necessary competences for the study and the simulation of the models.

TUTORSHIP ACTIVITIES

N/A

LAB ACTIVITIES

N/A

OTHER ACTIVITIES BESIDES THE COURSE

Seminars addressed to Ph D students and research fellows will be scheduled.

VISITING PROFESSOR PROFILE

The visiting professor will have a highly qualified research profile, with verifiable experience through an excellent record of publications on probability and its applications.
Experience in teaching similar topics will be a further qualification.

CONTACT PERSON AT THE DEPARTMENT

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