ID

VP084_MAT

Visiting Professor Program
Academic Year 2024/2025

TEACHING COMMITMENT: 16 hours

COURSE TITLE
Stochastic Differential Equations

TEACHING PERIOD
1st term

SCIENTIFIC AREA
Probability theory

LANGUAGE USED TO TEACH
English, Italian

COURSE SUMMARY
The module aims to put the student in a position to understand the mathematical formulation of various models of applied sciences and financial mathematics which involve stochastic differential equations. The module uses some of the concepts and tools that are developed in the modules Advanced Probability (Istituzioni di Calcolo delle Probabilita') and Elements of Functional Analysis and Measure Theory (Istituzioni di Analisi Matematica) and which are briefly mentioned in the first lectures. The proofs of the main results of the module are carried out completely. They show important links between Analysis and Probability. To improve the skills of reading and study the teacher may propose the reading of some scientific articles. Together with the module Stochastic Processes, this module allows students to get a taste of research in the stochastic area. The course also provides basic concepts on parabolic equations of Kolmogorov type.

LEARNING OBJECTIVES

Knowledge of the stochastic integral and the stochastic differential equations. Knowledge of the relations between stochastic differential equations and Kolmogorov equations. Ability to apply stochastic differential equations to solve problems in applied sciences.

VISITING PROFESSOR PROFILE

The VP will be a highly qualified scholar with an excellent track record of publications in probability and/or stochastic analysis, with special attention to the topics coherent with the course contents.

CONTACT REFERENT

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