UNIVERSITÀ DI PAVIA

Anno Accademico 2020/2021

STOCHASTIC PROCESSES

Enrollment year	2020/2021
Academic year	2020/2021
Regulations	DM270
Academic discipline	MAT/06 (PROBABILITY AND MATHEMATICAL STATISTICS)
Department	DEPARTMENT OF PHYSICS
Course	
Curriculum	Fisica delle tecnologie quantistiche
Year of study	1°
Period	2nd semester (01/03/2021 - 11/06/2021)
ECTS	6
Lesson hours	48 lesson hours
Language	Italian
Activity type	ORAL TEST
Teacher	ORRIERI CARLO (titolare) - 6 ECTS
Prerequisites	The courses of Probability and Functional Analysis of the Laurea Magistrale.
Learning outcomes	This course is the natural continuation of "Probability" (Laurea Magistrale). The objectives are, on the one hand, the theoretical studio of the stochastic processes and, on the other hand, the applicability of such a theory. At the end of the course, the student should be able to make simple computations with stochastic processes and should be able to model some concrete problems within such a theory.
Course contents	1. General notions about stochastic processes. 2. Markov chain. 3. Poisson process.

	3. Brownian motion or Wiener process. 4. Introduction to the stochastic Ito calculus with respect to the Wiener process.
Teaching methods	Lectures. (Exercises will be also discussed during the course).
Reccomended or required readings	1. Markov Chains, J. R. Norris, Cambridge University Press. 2. Stochastic Calculus: An Introduction Through Theory and Exercises, P. Baldi, Springer
Assessment methods	Oral examination. During the examination, the solution of a exercise will be also considered.
Further information	
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile