ECONOMICS AND MANAGEMENT
GRADUATE SCHOOL AND RESEARCH

UNIVERSITÉ CÔTE D'AZUR

NIVEAU « MASTER »

MENTION IES
PARCOURS DI

ANALYSE DES DONNÉES I

INSTRUCTOR

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OBJECTIVES OF THE COURSE

The course is designed to provide an in-depth knowledge of random variables and probability distributions, both from a conceptual and a technical point of view. Topics covered include : random variables, functions of random variables, univariate and bivariate distributions (Bernoulli, Binomial, Poisson, Geometric), random vectors, sequences of random variables, moment generating functions. By the end of the course, the student should be able: - to derive the moments of a random variable, - to derive the joint, conditional and marginal probability density functions, - to state the definition and recall the properties of multivariate normal distributions.

PREREQUISITES

Basic notions of statistics, probability theory and mathematical analysis (differential and integral calculus).

STRUCTURE OF THE COURSE

Chapter 1. Fundamentals of probability
Chapter 2. Random variables
Chapter 3. Probability distributions
Chapter 4. Bivariate random variables
Chapter 5. Random vectors

ASSESSMENT METHOD

Closed-book written exam.

TEXTBOOKS

John H. McColl, Multivariate probability, *Arnold Publishers*, London, 2004.