Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
ECON207	Mathematical Statistics I	3	4	0	0	4	6

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	Introduction to probability theory
Content	Counting techniques, conditional probability, univariate and multivariate continous and discrete random variables, fonctions of random variables, expected value and variance, Tchebychev Inequality, Law of Large Numbers, Central Limit Theorem
References	Schay, G. (2007), Introduction to probability with statistical application, Springer Science and Business Media. Ross, S.M (2009), Introduction to probability for engineers and scientists, 4th Edition, Elsevier Academic Press.

Theory Topics

Week	Weekly Contents
1	Introduction: probabilty, subjective and objective probability concepts
2	Experiments and events and counting techniques
3	Probability of events: subsets, partitions and population
4	Conditional probability and Bayes Theorem
5	Univariate discrete and continous random variables
6	Mid-term
7	Biivariate discrete random variables
8	Bivariate continous random variables
9	Marginal and conditional distributions and independence
10	Fonctions of discrete random variables
11	Fonctions of continous random variables
12	Expected value and variance
13	Expected value and variance of functions of random variables
14	Tchebychev Inequality, Law of Large Numbers and the Central Limit Theorem