Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
ECON208	Mathematical Statistics II	4	4	0	0	4	6

Prerequisites	ECON207
Admission Requirements	ECON207

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	The course is an introduction to the theoretical foundations of modeling and estimation methods used in many statistical applications. It provides essential mathematical perspective and tools and underlines the role of mathematics in applied statistics.
Content	Introduction: Modelisation of random events
	Part I: Special probability distributions
	Discrete distributions (uniform, bernoulli, binomial, geometric, hypergoemetric,
	negative binomial, poisson)
	Continuous distributions (uniform, exponential, gamma, chi-square, beta, normal)
	Part II: Moments
	Central and non-central moments
	Moment generating functions
	Part III: Estimation and inference
	Sampling, Law of Large Numbers and Central Limit Theorem
	Point estimation (method of moments and maximum likelihood estimation)
	Sampling distribution of estimators
	Confidence intervals
	Hypothesis testing
	Part IV:Simple linear regression
	Ordinary least square estimation of parameters
References	1.Schay, G. (2007), Introduction to Probability with Statistical Application, Birkhauser Boston.
	2. Sheldon, Ross (2004), Introduction to Probability and Statistics for Engineers and
	Scientists, Third Edition, Elsevier Academic Press.
	3. Fourastie J. et Laslier J.F (1987), Probabilites et Statistiques, Dunod-Paris.
	4. Grais, B. (1994), Methodes Statistiques: Tome 2, Dunod, Paris.

Theory Topics

Week	Weekly Contents				
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