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

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