mqant1324

2022

Econometrics

| 5.00 credits | 45.0 h + 20.0 h | Q2 |

Teacher(s)	Petitjean Mikael ;
Language :	French
Place of the course	Mons
Prerequisites	The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.
Main themes	• Introduction to econometric modeling (role, advantages, limits) • Introduction to data used in econometrics • Reminder of the tests on the mean and the variance • Reminder of the independence test in contingency tables • Simple linear regression • Ordinary least squares (OLS) method applied to the estimation of the regression line • Calculation of OLS estimators • Comparison between correlation coefficient and simple linear regression coefficient • ANOVA and calculation of R squared • Generalization of regression analysis to the multivariate case under matrix force • Properties of estimators • Omission bias, endogeneity, superfluous variable, introduction to the GETS method (GEneral To Specific), • Tests of normality and asymptotic normality • Specifying variables in level, log or squared • Tests on the parameters (Student, Fisher, Chi-squared – Lagrange multiplier, Wald, likelihood ratio) • Use of binary variables as explanatory variables (including the "diff-in-diff" method) • Linear probability models, LOGIT model, and PROBIT • Heteroscedasticity tests • Serial correlation tests • Robust standard deviations This course allows students to build econometric models and use data to estimate economic theories or relationships, implement or evaluate policies led by governments or companies. This course is based on the use of econometric software, both during the course and during the exercise sessions.
Learning outcomes	**At the end of this learning unit, the student is able to :** Given the « competencies referential » linked to the LSM Bachelor in Management and Business Engineering, this course mainly develops the following competencies: • 2.3. Acquire a knowledge base in quantitative, IT and digital methods. • 3.3. With the help of dedicated software tools, collate, select and analyse relevant information using basic statistical and data analysis methods. • 3.4. Analyse and interpret results or proposals, and provide a well-argued critique, for a simple but concrete management problem. • 5.4. Use software from different fields to solve a management problem. • 8.4. Using computer tools, create graphs and tables that meet scientific standards. 1 At the end of the class, the student will be able to: • deal rigorously, without excessive formalism, with statistical inference problems relating to the main tests for comparing two or more parameters; • apply the principles and method of multiple regression to the estimation of models with one or more explanatory variables. • ask questions that are relevant from a managerial and economic point of view, about a proposed case and the characteristics of the accessible data • choose the appropriate statistical approach and apply it; • provide methodologically correct answers to the problem posed by a rigorous interpretation of the results at the statistical, managerial and economic levels.
Bibliography	• GIARD V. (2003), Statistique appliquée à la Gestion, 8e éd., Economica. • JOHNSTON J., DINARDO J. (1999), Méthodes Econométriques, Economica, traduction de JOHNSTON J., DINARDO J. (1997), Econometric Methods, 2th ed. Mc Graw-Hill.

Faculty or entity in charge	CLSM

CLSM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor : Business Engineering	INGM1BA	5	MQANT1221	🔍
Bachelor in Management	GESM1BA	5	MQANT1221	🔍