**Module:** Mod. II - QUANTITATIVE METHODS II

**Name of course:** Econometrics **Course instructor:** Simone Borra **Course description:**

The course provides an introduction to econometric models and techniques to analyse social and economic datasets.

The course provides an introduction to modelling economic and management variables using regression and multivariate methods with an emphasis on applications in business, marketing and economics. In particular, in the course are presented models for the analysis of dependence: linear regression, ANOVA, autoregressive model, logit and probit model.

# Course outline:

* Simple linear regression: estimation, inference, goodness of fit.
* Analysis of Variance
* Multiple linear regression with cross-sectional data: estimation; inference; asymptotics; heteroskedasticity; multicollinearity, model selection, instrumental variables and two stage least squares.
* Logit and Probit model: estimation, inference, classification error, ROC curve, model selection
* Autocorrelation: Durbin-Watson test; Autoregressive model AR(1)

**Prerequisites**: knowledge of descriptive statistics, probability, random variables, inferential statistics.

# Readings:

Main text: Maddala G.S., *Introduction to Econometrics*. 2nd ed. MacMillan Publishing Company. Or: Wooldridge, Jeffrey M., Introductory Econometrics: A Modern Approach. 4th ed., South- Western, Cengage Learning

**Duration:** 24 Hours.

**Exam:** Final Exam.

The final exam is a written test with multiple choice and open questions concerning practical and theoretical aspects. Students are not allowed to consult any materials or other sources of information (including notebooks, laptops, dictionaries, mobile phones) during the exam.