**Statistics for Business**

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***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course has as main objective to provide both theoretical notions of basic statistics and empirical tools for data analysis. The acquired knowledge will help the student in a deeper understanding of quantitative reports based on firm data. More specifically, during the course, the fundamental notions of descriptive and inferential statistics will be applied to real data downloaded from some Italian and international firms databases. The analysis will be carried out using the free statistical software R (with an appropriate user interface, to make the software more user-friendly), whose functions will be described in class.

At the end of the course, the student will be able to:

- Understand quantitative reports and to critically analyse them;

- Use some Italian and international database;

- Perform basic database management operations in order to prepare them for statistical analysis;

- Carry out routine statistical analyses (descriptive statistics, graphical representations, hypothesis tests) using the R software;

- Estimate statistical models to highlight possible relationships in the data.

***COURSE CONTENT***

1. Descriptive statistics, graphical representations, means, measures of variability;
2. Basic principles of inference;
3. Two-way tables and relationships between variables: measures of correlation and association;
4. Introduction to the R environment with the R Commander interface for statistical data analysis;
5. How to use databases to create datasets: AIDA, ORBIS, Eurostat and Istat;
6. The linear regression model;
7. The logistic regression model.

***READING LIST***

Suggested readings:

Stock J. H. & Watson M. W., Introduzione all’Econometria, 5° Ed., Pearson, 2020.

Borra S. & Di Ciaccio A., Statistica. Metodologie per scienze economiche e sociali, 4° Ed., McGraw-Hill, Milano, 2021

Notes and supplementary material provided by the lecturer.

***TEACHING METHOD***

The classes will be mostly held as frontal lectures, where theoretical explanations will be alternate with empirical examples used to apply the theoretical notions. During the empirical applications the students will have time to autonomously develop short analysis in small groups supervised by the lecturer. For a profitable attendance at the course, it is therefore advisable for the student to bring their own laptop during the classes. The frontal classes will be also integrated with slides and supplementary material provided by the lecturer and available on the Blackboard page of the course.

***ASSESSMENT METHOD AND CRITERIA***

The evaluation method for the curse is built on two parts. The first one is given by a written exam, whereas the second is given by a group assessment. During the written exam the student will be requested to produce and comment short statistical analysis with the software learnt during the course and to answer theoretical questions (26 points in total). The group assessment, for a total of 5 points, will be produced by groups of three students.

***NOTES AND PREREQUISITES***

Attendance at classes, although not compulsory, is recommended. The course does not require prior knowledge of statistics and of the software usage. A pre-course in the form of asynchronous classes will be available on the Blackboard page of the course before the start of the course, in order to fill any gaps in the basic concepts. However, during the course all the topics will be taught from the basis.

***OFFICE HOURS***

The information about the office hours will be available on the lecturer’s personal page (http://docenti.unicatt.it/). However, it is always possible to contact the lecturer by email. The office hours will be held in presence (Faculty of Economic and Law, Economics building, V floor) or using TEAMS.