# Statistical Data Analysis

## Prof. Silvia Facchinetti

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

Decisions are often based on the analysis of data. This course deals with concepts, methods and techniques for analyzing data from a descriptive perspective, also using software tools such as Excel.

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

1. Understand the fundamentals of statistics (learn how to work with different types of data, understand and calculate the measures of central tendency, variability and measures of dependence);
2. Perform the main dataset descriptive analyses and write simple interpretation reports on the analysed phenomenon.

***COURSE CONTENT***

1. *Describing data.*

* Frequency distributions
* Graphical representations
* Measures of location and variability

1. *Two-dimensional data*.

* Scatter plot
* Covariance
* Correlation

1. *Linear regression models*.

***READING LIST***

P. Newbold-W.L. Carlson-B.M. Thorne, *Statistics for Business and Economics,* Pearson, 2013, 8th Global edition.

The exam preparation will be supplemented with lesson slides and other documentation made available to students through the Blackboard platform dedicated to the course.

***TEACHING METHOD***

Lectures with both methodological and applicative contents, and exercise sessions using PC-labs are carried out with the aid of slides made available to students through the Blackboard platform before each lesson.

***ASSESSMENT METHOD AND CRITERIA***

The examination consists of a production and discussion of a statistical report regarding the analysis of a real data set. Especially, the report (5 or 6 pages long) should contain appropriate graphs, tables and synthesis indices obtained through use of excel, together with an interpretation of the analysed phenomenon. An oral discussion follows for students that achieve a score of at least 18/30 in the production of the report, with the aim to assess the knowledge and understanding of the course subjects included in the report. Both production and discussion contribute to the final mark.

***NOTES AND PREREQUISITES***

Students enrolling in this course should have a basic understanding of mathematical.

In the event that the health situation related to the Covid-19 pandemic will not allow face-to-face teaching, remote teaching will be guaranteed in ways that will be communicated in due time to the students.

*Office hours*

Office hours take place at the Department of Statistical sciences, Largo Gemelli 1, build Lanzone 18, room 302. Timetable of reception is communicated on the lecturer’s web page.