



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Statistics I

2021-1-E4101B005

Learning objectives

The course is about **descriptive statistics**, both univariate and bivariate, for the analysis of data of various nature.

Contents

The course is about **descriptive statistics** and it is organized in two macro sections. The first part concerns **univariate statistics**, covering the notions of frequency distributions, measures of central tendency, variability and shape. The second part concerns **bivariate statistics**, with special emphasis on measures for quantifying the relation between two variables.

Detailed program

The course is devoted to descriptive statistics and it is divided in two macro sections.

Section I: univariate statistics

- Preliminary concepts
- Frequency distributions
- Measures of central tendency

- Measures of variability

- Main graphical representations

- Symmetry, kurtosis and multimodality

- Categorical data and heterogeneity indexes

Section II: bivariate statistics

- Covariance and correlation
- Simple linear regression
- Partial correlation
- Analysis of variance
- Contingency tables
- Dependence among variables
- Time series

Prerequisites

There are no prerequisites. However, it is strongly recommended the knowledge of basic notions of mathematics.

Teaching methods

During the Covid-19 emergency lessons will be both in person and online.

Assessment methods

The exam is based on a **written test** and sometimes on an oral test. Students are required to attend the **oral examination** only if the grade of the written part is **greater or equal than 27 out of 30**.

The written examination is divided in two parts. Students must pass the first part in order for the exam to be considered valid. The final grade is based on both parts.

Textbooks and Reading Materials

Textbook (in Italian)

- Piccolo, D. (2010), *Statistica*, Terza edizione, Il Mulino.

Reading material (in Italian)

- Cicchitelli, G. (2012), *Statistica principi e metodi*, Seconda edizione, Pearson.
- Piccolo, D. (2020). *Statistica per le decisioni*, Terza edizione, Il Mulino.

Moreover, additional teaching material (in Italian) will be available on the e-learning website.

Semester

The course is scheduled in the first semester.

Teaching language

Italian
