UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

# Statistics I

**2122-1-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**.

## 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