UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

# Statistics I

**2021-1-E4102B005**

## Learning objectives

The Statistica I course is the first course of statistics in the bachelor of Statistica e Gestione delle Informazioni. It has as its objective to introduce students to the theoretical knowledge and practical skills of statistics that constitute the basis of the bachelor itself. Students at the end of the course must be able to recognize the nature of the statistical variables, knowing how to extract them from a database. They must also be able to represent them graphically in an appropriate manner and should be able to synthesize information that can be both univariate and bivariate through appropriate indicators. It will be required that the student begin to express himself clearly and with proper language, also knowing how to interact with professional figures not necessarily prepared on the statistical discipline.

## Contents

Collection and classification of statistical data. Main tools of univariate and bivariate descriptive statistics.

## Detailed program

- Statistics as a science
- Populations and statistical units
- Statistical variables and measurement scales
- Graphical representations
- Univariate frequency distributions
- Means

- Variability measures
- Standardized indices
- Asymmetry and skewness
- Bivariate distributions
- Stochastic independence and mean dependence
- Correlation.

## Prerequisites

No formal prerequisites required.

## Teaching methods

During the Covid-19 emergency period, lessons will take place in the classroom and remotely.

Exercises and tutoring activities are planned in which further practical activities take place.

## Assessment methods

The exam consists of a written test that includes questions of theory and exercises. It is necessary to reach the sufficiency (18/30) in both parts that make up the written test.

Optional oral exam on request of the teacher or the student only if the written test is sufficient.

The written test consists of theoretical questions and numerical exercises (to be carried out with the calculator). The theoretical questions allow to verify the knowledge of the main descriptive statistical indicators. The exercises allow to verify the ability to choose, calculate and comment on the appropriate statistical indicators in the context of simple practical problems. Furthermore, the theoretical questions and the exercises (with the relative comments) allow to verify the ability to express oneself with an adequate technical language.

During Covid-19 emergency period, exams will only be online. They will be carried out using the WebEx platform and a public link for the access to the exam will be shown on the e-learning page of the course.

## Textbooks and Reading Materials

L. Deldossi, R. Paroli, Lezioni di statistica, G. Giappichelli Editore, Torino, 2015

G. Leti, L. Cerbara, Elementi di statistica descrittiva, Il Mulino, Bologna 2009

L. Santamaria, Statistica descrittiva – Applicazioni economiche e aziendali, Vita e Pensiero, Milano 2006

A. Zanella, Elementi di statistica descrittiva, CUSL, Milano 2000

M. Zenga, Lezioni di statististica descrittiva, G. Giappichelli, Torino 2007

## Semester

I Semester, I cycle

## Teaching language

Italian