



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Statistics I

2627-1-E4104B003

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.

Knowledge and understanding

Students may be able to recognize the nature of statistical variables by knowing how to extract them from a database. They will also have to represent graphically in an appropriate way and be able to synthesize, through suitable indicators, the information that can be both univariate and bivariate.

Ability to apply knowledge and understanding

Students will be required to know how to perform simple data analysis (descriptive statistics) and have developed the ability to express themselves clearly and with language properties to be able to interact with professionals not necessarily trained in 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

Lectures of theory and examples in the classroom. Exercises in the classroom with some exercises on the blackboard. Moreover, the teaching is flanked by tutoring activities in which further practical activities and corrections of exercises done at home are carried.

Classroom lectures: 36 hours

Classroom exercises: 18 hours

Assessment methods

The examination will take the form of a written examination comprising 10 theory questions and a number of exercises. In order to pass the examination, students are required to achieve a pass mark (18/30) in both parts of the written assessment.

The final mark for the written examination is calculated as the arithmetic mean of the two marks, provided both are passing marks.

It should be noted that an optional oral examination may be held at the discretion of the lecturer. It is important to note that students are only permitted to request this if they have passed the written examination.

The written examination comprises semi-open-ended theory questions and numerical exercises, the latter of which must be completed using a calculator. Theory questions evaluate the comprehension of fundamental univariate and bivariate statistical indicators. The exercises evaluate the capacity to select, calculate and interpret the relevant statistical indicators within the framework of elementary practical problems. Moreover, the theoretical questions and exercises (accompanied by their respective comments) serve to evaluate the capacity to articulate oneself using the appropriate technical language.

The oral examination is comprised of a presentation of theoretical topics. Students are expected to demonstrate an ability to present and discuss theoretical concepts, while also establishing connections between different topics.

Textbooks and Reading Materials

G. Boari, G. Cantaluppi, Note di statistica descrittiva e primi elementi di calcolo delle probabilità, EDUCatt Università Cattolica, Milano, 2020

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

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

F. Mecatti, Statistica di base - Come, quando, perchè, McGraw-Hill, Milano 2022

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

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

Semester

I Semester, I and II period

Teaching language

Italian

Sustainable Development Goals

QUALITY EDUCATION
