

SYLLABUS DEL CORSO

Statistica I - 1

2425-1-E1803M041-T1

Learning objectives

This course introduces students to the principles of descriptive statistics with a view to:

- identifying which data are needed to address a problem or achieve a specific objective;
- organizing data into statistical tables and visualizing data with appropriate charts;
- getting the right information out of a dataset, making use of appropriate techniques;
- recognizing data structures in univariate and bivariate contexts.

Contents

The course covers the following topics:

- data classification and exploratory data analysis (with charts and tables);
- descriptive statistics for univariate and bivariate data.

Detailed program

What is Statistics?

- Statistics as a science
- Applications of Statistics
- The branches of Statistics

Summarizing univariate data

- Data collection
- Ratios of statistical data
- Frequency distributions and charts
- Location measures
- Variation in data: concept and measures
- Inequality: concept and measures
- Skewness
- Mathematical models for frequency distributions

Summarizing bivariate data

- Statistical interpolation
- The method of least squares
- Properties of least squares
- Bivariate frequency distributions
- Independence and association measures
- The regression function and the regression line
- Concordance and correlation measures

Prerequisites

The course has no specific pre-requisites.

Only a basic knowledge of mathematical methods from Secondary School is presumed.

Teaching methods

The course consists of lectures (5 ects = 40 hours) and exercise sessions (1 ects = 12 hours) that will be delivered in presence, with approximately 30-40% of interactive activities (Excel, Wooclap surveys, quizzes and online exercises).

Assessment methods

Assessment methods aim at verifying that students:

1. have understood the logic behind different statistical methods and the properties of various statistical measures;
2. are familiar with statistical techniques in view of analyzing a univariate/bivariate dataset and reaching reliable conclusions;
3. are able to interpret the results of statistical analyses and to provide appropriate comments for the numbers they produce.

The assessment is based on a written exam, with possible use of software instruments, and an oral exam.

Textbooks and Reading Materials

- M. Zenga, "Lezioni di Statistica Descrittiva", second edition, Giappichelli ed.
- M. Zenga "Esercizi di statistica", Ed. Giappichelli, 1993
- M. Zenga "Richiami di matematica", Ed. Giappichelli, 1992
- G. Leti "Statistica descrittiva", Ed. Il Mulino, 1983.
- Lecture notes available on the e-learning platform.

Semester

Spring

Teaching language

Italian

Sustainable Development Goals

QUALITY EDUCATION
