UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Statistics I - 1

2223-1-E1802M115-E1802M003M-T1

Learning objectives

Economic disciplines often deal with big sets of data, with many different characteristics. This course aims at guiding students to the right choice of summary tools to describe correctly the phenomena under investigation. Students will know how to distinguish among different kinds of data, how to evaluate their quality and how to choose efficient ways of presentation. Students will learn how to prevent false or ambiguous interpretations of data, by choosing adequate summary tools which can be easily interpreted, even by people without any knowledge of statistics. At the same time, students will acquire a critical approach to data processed by third parties.

Contents

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

Detailed program

Statistics as a science.

Applications of Statistics.

The branches of Statistics.

Summarizing univariate data.

Data collection.

Ratios of statistical data.

Frequency distributions and graphical displays.

Central tendency measures.

Variability measures.

Concentration measures.

Skewness measures.

Summarizing bivariate data.

Main interpolation methods.

The least squares method.

The least square line and its properties.

Bivariate frequency distributions.

Independence and association measures.

The regression function and the regression line.

Concordance and correlation.

Prerequisites

There are no propaedeutic exams. Specifically, the knowledge of concepts of mathematical analysis, such as derivatives and integrals, is not requested.

Teaching methods

Frontal lessons (theory and examples). Practical sessions (exercises).

Assessment methods

The module has a written test and an oral. The written test contains both exercises and questions about theory, approximately in proportions of 60% and 40%. The written test is organized into exercises composed by questions, each graded as 2 to 4 points. The total score is 31. The written test lasts 120 minutes. Examples of written tests, with solutions, can be found on the e-learning. Only students with a grade of at least 18/30 can take the oral, which deals with the whole program. In any case, exam-papers showing is set, where students can ask for details about corrections and criteria used to grade.

Textbooks and Reading Materials

M. Zenga “Lezioni di statistica descrittiva (seconda edizione)”, Ed. Giappichelli, 2014

M. Zenga “Esercizi di statistica”, Ed. Giappichelli, 1993

M. Zenga “Richiami di matematica”, Ed. Giappichelli, 1992

G. Leti “Statistica descrittiva”, Ed. Il Mulino, 1983

Semester

Second semester.

Teaching language

Italian.

Sustainable Development Goals