UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Statistical Methods - 1

2021-2-E3301M194-E3301M197M-T1

Learning objectives

The objective is to provide students with a solid foundation in some of the most important, broadly used, statistical and probabilistic model. The course also aims to provide some experience in applying those statistical methods to a broad range of real economic problems. The student will acquire the ability to interpret to interpret results and will develop his own point of view in reading tables and graphs, even made by a third part, related to economic studies

Contents

This course covers probability and statistical methods and their relevance in economics. The course contains three sections: the first one concerns basic tools for probabilistic computation; the second focuses on probability and several random variable models; in the third one, some techniques of statistical inference are introduced.

Detailed program

This course covers probability and statistical methods and their relevance in economics.

The first part of the course is devoted to the definition of probability and to the foundation of the probabilistic theory, developed by the axiomatic approach. Also, the concept of random variable is introduced.

In the second part, the more important discrete and continuous random variables are introduced, as models for representing and characterizing quantitative phenomena. Conditional distributions and expectation are also presented and discussed.

The third part deals with those cases where it is not possible to observe economic phenomena on all units of the

population and where it takes place, therefore, a partial survey. Appropriate methodologies that allow to point estimate, or through a range of values, some of the characteristics of the population of interest are introduced.

Prerequisites

An introductory course of descriptive Statistics.

Teaching methods

The course includes the presentation of all contents through asynchronous videotaped lessons. In addition, there will be a synchronous weekly video conference, in which the topics presented during the week will be explored. There will also be exercises, where statistical techniques will be put in practice with Excel.

Assessment methods

The exam consists of questions about theory and exercises. The former test students' knowledge and understanding of the main concepts of the subject. The latter measure students' ability in the application of such concepts to solve simple practical problems. The exam will be done with excel.

Textbooks and Reading Materials

M. Zenga: "Modello probabilistico e variabili casuali", Ed. Giappichelli, 1995

M. Zenga "Elementi di inferenza statistica", Vita e Pensiero, 2009

Semester

First semester.

Teaching language

Italian.