UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Inference Principles

2425-1-F7601M075-F7601M065M

Learning objectives

This part has the goal to provide the students with some elementray notions of probability and statistical inference for touristic applications.

Contents

We will start with some basics on probability and we introduce the notion of random variables (discrete and continuous case). We will concentrate especially on Binomial and Normal random variables. All these notions will then be applied to statistical inference for estimation and testing problems.

Detailed program

The following topics will be covered.

1. **DESCRIPTIVE STATISTICS**. Statistics and distributions of frequencies. Indices of postion and variabilty.
2. **PROBABILITY**. Definition of a probability space and properties of the probability.
3. **RANDOM VARIABLES**. Random variables (discrete and continuous case). The normale and Binomial distributions. The central limit theorem: hints.
4. **ESTIMATION**. Estimation of means and proportions based on a sample of size n. Confidence intervals for means and proportions.
5. **HYPOTHESIS TESTING**. Introduction to tests for means and proportions in the context of a single population.

Prerequisites

None.

Teaching methods

Traditional lectures and exercise sessions. The lectures will be in presence.

Assessment methods

The exam is written, the oral test is not mandatory. In the written test, the student is asked to solve exercises and to answer some questions concerning statistical inference.
The oral test is optional, and it may be requested by the student or by the instructor some days after the written test. The oral exam will focus on questions of the theory developed during the course.

Textbooks and Reading Materials

Textbook with exercises:

- S.M. Ross (2014). Introduzione alla Statistica. Apogeo Education, seconda edizione.

Semester

Fall semester.

Teaching language

Italian.

Sustainable Development Goals

QUALITY EDUCATION