UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Statistics For Research

2021-3-I0202D130-I0202D059M

Aims

Reinforce the basic knowledge of the most important statistical-methodological tools of the descriptive statistics through the analysis of scientific literature. Inferential statistics for: design of experiments, data collection and analysis, interpretation of scientific literature. The student will be able to: understand the main concepts of study design, implement statistical analysis, read the scientific literature presenting descriptive and inferential statistic results.

Contents

The goal of the course is to contribute to the education of a student be able to:

1) understand the principles of the experimental design in medicine and biology

2) understand the most important statistical techniques for data analysis

3) use a software for data analysis

4) understand the literature presenting results from statistical analysis.

Detailed program

The module of Biostatistics is organized in three parts: descriptive statistics, inferential statistics, and interpretation of scientific literature. The first and the second part share the following characteristics:

1) inclusion of methodological aspects of study design and programming of experiments

2) are thought using motivating examples from the applied literature

3) involves the STATA package

Part one – Basic descriptive statistics, graphical representation of quantitative and qualitative variables, indicators of position and variability, Gaussian distribution, concepts of probability.

Part two– Basics on inferential statistics, Hypothesis testing on continuous variables, T test for paired and unparired data, test on association between categorical variables, Chi square test.

Part three – Reading, interpretation, comment of scientific papers.

Prerequisites

The student is expected to have a basic knowledge on the use of personal computer.

Teaching form

Audio-video clip and Webex meetings.

Textbook and teaching resource

1) M.M. Triola, M.F. Triola, Fondamenti di statistica per le discipline biomediche

2) Notes written by the teacher

Semester

Second semester

Assessment method

Written test

Office hours

To be defined with the student by email contact