UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Biostatistics (blended)

2122-1-F0901D043-F0901D086M

Aims

Basic knowledge of the most important statistical-methodological tools of the descriptive and inferential statistics for: design of experiments, data collection and analysis, the complexities of lab data.

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 the medical biotechnologist in order to be able to:

- understand the principles of the experimental design in medicine and biology
- understand the most important statistical techniques for data analysis
- understand the specificities of the lab data
- use a software for data analysis (additional)

Detailed program

The module is organized as follows:

Part one

Introduction, basic definitiond and notation, type of studies (i.e. study design)

Part two

Basic descriptive statistics, graphical representation of quantitative and qualitative variables, indicators of position and variability

Part three

Basic probability theory, binomial and gaussian distributions, sampling distributions

Part four

Basics on inferential statistics, point estimated on mean and proportion, hypothesis testing on mean and proportion, hypothesis testing on studies on the comparison of two samples, analysis of contingency tables (supplementary)

Part five

Statistics with Lab data: lessons from the interacion with a former student in medical biotechnologies (now researcher)

Software

The student may use the STATA software (licenza di ateneo) for data analysis (not mandatory)

Prerequisites

Specified in the syllabus of the course.

Teaching form

Specified in the syllabus of the course.

Textbook and teaching resource

Specified in the syllabus of the course.

Semester

Specified in the syllabus of the course.

Assessment method

Written test

- The written exam takes place on the university's esamionline

platform https://esamionline.elearning.unimib.it/ in the laboratory or with proctoring monitoring (if required by the health emergency).
- 10 questions with 4/5 answers of a calculation reguired
- 30 minutes
- 3 points scored for each question, oral question for 30 cum laude

Office hours

Specified in the syllabus of the course.