



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Biostatistica (blended)

2021-1-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:

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

Detailed program

The module is organized as follows:

Part one

Introduction, basic definitions 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 interaction with a former student in medical biotechnologies (now researcher)

Software

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 lessons, On-line classes (webex in little groups), On-line quiz on Pearson Mymathlab plugin.

Textbook and teaching resource

1) M.M. Triola, M.F. Triola, "_____

https://www.pearson.it/opera/pearson/0-6471-fondamenti_di_statistica_per_le_discipline_biomediche

2) Notes written by the teacher (revision of original slides of the book) 3) Online quiz

Semester

First semester

Assessment method

Written test

Office hours

Under request by moodle e-mail

<https://unimib.webex.com/meet/laura.antolini>
