UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Introduction to statistics with R (part I): data description and basic inference

2425-102R-09

Title

Introduction to statistics with R (part I): data description and basic inference

Teacher

Davide Paolo Bernasconi

Language

English

Short description

Objectives
The course, through lectures and computer lab sessions, aims to provide basics notions of statistics to plan and analyze the results of a scientific study or experi-ment.
At the end of the course the participants should be able to choose the most suit-able design for their study, compute the optimal sample size, perform a graphical and tabular description of the data collected and analyze the association between variables through proper measures and hypothesis testing.

Course program
Day 1:
Introduction to R language
Data summaries: descriptive measures and graphical representa-tions.
Lab session with R

Day 2:
Introduction to hypothesis testing
Parametric tests for quantitative variables
Lab session with R

Day 3:
Non-parametric tests for quantitative variables
Tests for categorical variables
Lab session with R

Day 4:
Correction for multiple comparisons
Sensitivity, specificity and ROC curve
Lab session with R

Target audience

Doctoral students of any discipline who are interested in the practical application of basic statistical methods for data analysis in scientific research

Maximum number of participans

50

Assessment method

Test with multiple choice questions

CFU / Hours

2 CFU / 16 hrs

Teaching period and mode

13/01/2025 9 am -1 pm U2.08A
15/01/2025 9 am -1 pm U2.08A
20/01/2025 9 am -1 pm U1.06
22/01/2025 9 am -1 pm U2.08A

course registration on “Segreterie online”: from 16/12/2024 to 05/01/2025

The course will be taught in presence with the possibility of remote participation through streaming lessons and recordings.

Sustainable Development Goals

QUALITY EDUCATION