



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

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 experiment.

At the end of the course the participants should be able to choose the most suitable 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 representations.

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 participants

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 “Segreteria 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
