



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

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

2122-DOTT-MOD11

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#### Titolo

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

#### Docente(i)

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#### Lingua

English

#### Breve descrizione

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:*

- Planning a study: types of designs
- 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 the ROC curve
- Lab session

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

**Participants (min/max):** 20/40

## **CFU / Ore**

CFU: 2 CFU

Ore: 16 (8 in class + 8 in computer lab)

## **Periodo di erogazione**

12/01/2022 9 am -1 pm LAB 4A1

14/01/2022 9 am -1 pm LAB 4A1

17/01/2022 1 pm-5 pm LAB 719

19/01/2022 9 am-1 pm LAB 4A1

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