



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Biostatistics

2324-4-H4102D027-H4102D099M

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#### Aims

The student will learn:

- the basic tools to understand scientific results in observational and experimental studies with continuous outcome, binary outcome, survival time outcome.
- how to interpret results from regression models relating aforementioned outcome to explanatory/exposure variables.

The student will work on the interpretation of results from scientific papers in cardiology research in adults and children.

#### Contents

- Linear regression
- Survival analysis

#### Detailed program

Recap on study designs, sampling methods, confidence intervals.

##### - Linear regression

Methodological definition of correlation and linear regression: model formulation, results interpretation, prediction.

Comment on the results of a scientific paper including linear regression analysis.

### **- Survival analysis**

Basic theory in survival analysis: complexities of life time data, survival/incidence functions, rate, hazard function, Kaplan Meier estimator, epidemiological rate (exponential) estimator. Comment on the results of a scientific paper including Kaplan Meier curves and Cox model.

### **- Additional content (not mandatory)**

Stata commands to run Linear regression, logistic regression, Kaplan Meier analysis.

## **Prerequisites**

- Basic descriptive and inferential statistics.
- Basic use of Stata software.

## **Teaching form**

Standard synchronous classes and video-clips.

## **Textbook and teaching resource**

- Book "Biostatistics for Biological and Health Sciences" - chapter 1 (section 3), chapter 10 (from section 2 to 5) and chapter 14.

- You can borrow the e-book here in the section "curiosone"

- Quiz (for self assesement).

Slides (related to the book).

- Scientific papers.

## **Semester**

First semester.

From 10 to 13, LAB in Monza, Dates: 09, 16 Oct, 20, 27 Nov, 11 Dec

## **Assessment method**

On examonline.elearning platform.

Type of test: multiple choice/open questions (10 questions, 3 points for each correct answer, no penalties for wrong answers), 3 additional points scored by the offline question.

If the total score is  $\geq 18$  you pass.

## **Office hours**

Under request by the elearning email, in the Webex room of the teacher.

## **Sustainable Development Goals**

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