



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Medical Statistics

2425-1-K0101D002-K0101D003M

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#### Aims

Descriptive and inferential statistics in applications in obstetrics and nursing science

#### Contents

Statistical units, sample, population, variables and data, construction of tables and graphs. Descriptive statistics: indices of location and dispersion. Probability: union and intersection, discrete and continuous random variables, the Binomial and the Normal distribution. The process of inference: point estimation and sampling distributions; interval estimation and confidence intervals; the test of hypothesis.

#### Detailed program

Introduction to Statistics: types of variables; construction of tables and graphs (for one or more variables). Descriptive Statistics: indices of location (mean, median, mode, percentiles); indices of dispersion (deviance, variance, standard deviation, coefficient of variation); random and systematic errors as related to any measurement process: indices of precision and accuracy; correlation and simple linear regression. Probability: definitions of probability; conditional probability and independence; probability of the union and intersection of events; examples of applications in the clinical context (sensitivity, specificity and predictive values of a diagnostic test); the Binomial distribution; the Normal distribution. Inference: sample and population; sample estimates and population parameters; sampling distributions of estimators (distribution of the sample mean); confidence interval.

## **Prerequisites**

None

## **Teaching form**

Lectures in presence

## **Textbook and teaching resource**

STATISTICA MEDICA E STATISTICA PER LA RICERCA SPERIMENTALE E TECNOLOGICA -  
Bland M. (2019) Statistica Medica, Apogeo;  
Pagano M., Gauvreau M. (2003) Biostatistica, Idelson-Gnocchi;  
Bossi A., Cortinovis I. (1996) Statistica medica. Esercitazioni, Città Studi Edizione.

## **Semester**

First semester

## **Assessment method**

Written exam with exercises, tests and open questions

## **Office hours**

On demand

## **Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING | DECENT WORK AND ECONOMIC GROWTH

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