



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Economic Statistics I

2021-2-E1401A014

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#### Learning objectives

The course is an introduction to statistics, aiming at building the theoretical competences needed in reading a descriptive analysis and the practical competences needed in performing one, on one side, and at introducing the basics of probability and inference, on the other.

#### Contents

1. Descriptive statistics
2. GNU-R computational environment
3. Probability calculus
4. Statistical inference

#### Detailed program

1. Introduction
2. Descriptive statistics
  1. Frequency distributions
  2. Position indexes
  3. Variability indexes
  4. Concentration indexes
  5. Multivariate distributions
  6. Correlation
3. GNU-R computational environment

1. GNU-R
2. GNU-R: Data
3. GNU-R: Distributions
4. Probability calculus
  1. Probability axioms
  2. Bayes theorem
  3. Random variables
  4. Probabilistic models
  5. Asintotic theorems
5. Inference
  1. Random samples
  2. Hypothess testing
  3. Confidence intervals
  4. Linear model

## **Prerequisites**

Basic mathematics.

## **Teaching methods**

Classes and practical exercises.

## **Assessment methods**

Written exam.

## **Textbooks and Reading Materials**

Piccolo D., Statistica per le decisioni, terza edizione, Il Mulino, 2020, ISBN 978-88-15-27220-1

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