



Research  
Education  
Outreach

**CCA**

Master in Economics and Ph.D. in Economics

# INTRODUCTORY STATISTICS

Fall 2024

Instructor: Alessandra Moresi

## Contact Information

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Office Hours: send me an email and we will schedule an appointment

## Course Description

The course provides a formal introduction to some basic concepts of probability and statistics which are useful in economics and social sciences.

## Exam

There will be a written exam at the end of the course.

## Textbooks

- Part I: *Introduction to the Theory of Statistics* - Mood, Graybill, and Boes ([Link to PDF](#))
  - Chapters I to IV
- Part II: *Lecture Notes on Econometrics for 1st and 2nd year PhDs* - Clément De Chaisemartin ([Link to PDF](#))
  - Chapter I
- Further reference: *Introductory Statistics* - Wonnacott and Wonnacott

# Program

## Part 1: Fundamentals of probability

- Introduction to set theory and to probability
- Random variables, distribution functions and expectations
- Special parametric families of univariate distributions
- Joint and conditional distributions, stochastic independence, more expectation

## Part 2: Tools in asymptotic statistics

- Independent and identically distributed samples
- Using an estimator to estimate an estimand
- Consistency and  $\sqrt{n}$ -consistency
- Confidence intervals
- The t-test: level, power function, and minimum detectable difference