

## SYLLABUS DEL CORSO

### Statistica (complementi) - 1 - 2

2627-3-E1801M046-E1801M066M-T1

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#### Learning objectives

The aim of the course is to introduce basic problems in statistical inference and to provide the main concepts and tools of statistical inference. The interplay among the contents of the course will be exemplified through examples.

By the end of the course, students will be able to:

- Understand the fundamental concepts of probability and inferential statistics.
- Apply basic statistical methods to real data.
- Critically evaluate results and choose the most appropriate statistical method.
- Communicate the results of statistical analysis clearly and effectively.
- Acquire the foundation to pursue more advanced statistical studies independently.

#### Contents

The main concepts and basic tools of statistical inference.

#### Detailed program

- Main concepts of probability theory
- Random variables
- Some probabilistic models: Bernoulli and binomial distributions, Poisson distribution, normal distributions, chi-squared, t-Student's distributions and their approximations
- Sampling distributions: an overview
- Point estimate, confidence interval, and hypothesis testing: theory and examples.

## **Prerequisites**

Main concepts of univariate and bivariate descriptive statistics.

## **Teaching methods**

Face-to-face lectures in the delivery mode.

## **Assessment methods**

Thw will be just the final exam.

The exam is written and includes multiple choice questions and numeric exercises (using a non-programmable calculator and statistical tables). The aim of the exam is to evaluate the knowledge of tne concepts and their application.

## **Textbooks and Reading Materials**

Cicchitelli, D'urso, Minozzo. Statistica: principi e metodi, Ed. Pearson.

## **Semester**

First semester

## **Teaching language**

Italian

## **Sustainable Development Goals**

QUALITY EDUCATION

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