

COURSE DETAIL

INTRODUCTORY STATISTICS

Country

Italy

Host Institution

University of Bologna

Program(s)

University of Bologna

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Statistics

UCEAP Course Number

113

UCEAP Course Suffix**UCEAP Official Title**

INTRODUCTORY STATISTICS

UCEAP Transcript Title

INTRODUCTORY STATS

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

The course covers the fundamental aspects of probability theory and the principles of statistical inference. Upon successful completion of this course, students are able to perform a rigorous data analysis: i) manipulate and summarize data; ii) visualize and understand relationships inside data; iii) apply the appropriate tools of probability theory and inferential statistics to extract useful information, test hypotheses and make predictions.

The course content is divided into 9 parts:

1. Introduction to data: Data basics; Sampling principles; Experiments and observational studies
2. Summarizing data: Examining numerical data; Considering categorical data
3. Probability: Defining probability; Conditional probability; Bayes theorem
4. Random variables: Discrete and continuous; Expectation; Linear combination; Central limit theorem
5. Distributions of random variables: Normal; Geometric; Binomial
6. Foundations for inference: Point estimates and sampling variability; Confidence intervals; Hypothesis testing
7. Inference for numerical data: One-sample means; Paired data; Difference of two means
8. Inference for one proportion
9. Introduction to linear regression: Fitting a line, residuals and correlation; Least squares regression; Diagnostics

Language(s) of Instruction

English

Host Institution Course Number

93264

Host Institution Course Title

INTRODUCTORY STATISTICS

Host Institution Course Details

<https://www.unibo.it/en/study/course-units-transferable-skills-moocs/course-uni...>

Host Institution Campus

BOLOGNA

Host Institution Faculty

Host Institution Degree

LT in GENOMICS

Host Institution Department

PHARMACY AND BIOTECHNOLOGY

Course Last Reviewed

2025-2026

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