# Course for Ph.D. students
# XLII Cycle (1 Nov 2026 – 31 Oct 2029)

**Curriculum**
**Products for the food and health markets**

## Practical biostatistics (1ECTS)

***Prof. Massimiliano Tognolini*** *(University of Parma)*

**Beginning of February 2027**
*Course language:* **English**

### Course description

Practical lessons on biomedical data analysis and interpretation. The course will include a prominent amount of exercise by means of Excel and Prism – GraphPad.
The following topics are expected to be addressed
Descriptive statistics:

- distributions, measures of central tendency, measures of dispersion, skewness

Data representation:

- bar plot, whisker plot, scatter plot, low-to-high

Inferential statistics

- population and sample
- comparing a sample with a population, a sample with a sample: t-test, p significance, type I and type II error.
- comparing 2 or more groups: One-way ANOVA, Two-way ANOVA
- simple regression and correlation
- non-parametric statistics: $\chi^2$ test

Good statistical practices in experimental design and their reporting
Practical course.

**The course is limited to 15 students**
**Please register before January 30, 2027 by sending an e-mail to massimiliano.tognolini@unipr.it**
Evaluation: Yes, written exercise