

# Course for Ph.D. students

## 38<sup>th</sup> cycle (Nov 2022 – Oct 2025)

### MULTIVARIATE ANALYSIS WITH R (2 ECTS )

**Dr. Laura Scalvini**  
*University of Parma*

*Course language: English*

*Approximative scheduling: January 16<sup>th</sup> and 17<sup>st</sup>, 2023; 10:00-13:00, 14:30-17:30*

*To attend the course please contact:*

**Dr. Laura Scalvini ([laura.scalvini@unipr.it](mailto:laura.scalvini@unipr.it))**

### Course description

The course provides basic knowledge on multivariate analysis applied to medicinal chemistry and pharmaceutical analysis. Principal component analysis (PCA) and partial least squares analysis (PLS) are introduced and discussed. The students are trained on the use of the open-source program R for the treatment and analysis of data. Basic elements of statistics are a prerequisite.

The course includes lessons and exercises in the computer laboratory, for a total of 12 hours in two days.

Slides and a tutorial will be provided by the teacher. Manuals are available online.

Additional readings: “Chemometrics with R - Multivariate Data Analysis in the Natural Sciences and Life Sciences” R. Wherens, 2011, Springer-Verlag Berlin Heidelberg.

At the end of the course the students have to complete exercises similar to the case studies examined during the lessons.