

# Course for Ph.D. students

## 40<sup>th</sup> cycle (Nov 2024 – Oct 2027)

### MULTIVARIATE ANALYSIS WITH R (2 ECTS )

**Prof. Laura Scalvini**

University of Parma

*Course language: English*

*Approximative scheduling: January-February 2025*

*The exact date and time will be announced by e-mail and on the website in the page "Active courses" for each session.*

*To attend the course please contact:*

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### Course description

The course provides basic knowledge on multivariate analysis applied to medicinal chemistry and pharmaceutical analysis. Different chemometrics techniques are introduced and discussed, including principal component analysis (PCA) and partial least squares analysis (PLS). 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 tutorials 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.