

Monday 9th January 2023

through

Tuesday 31st January 2023

Biostatistics for Molecular and Cellular Biology (cfu 5)

**SPEAKER: Prof. Giorgio Binelli - DBSV
University of Insubria**



PROGRAM

The goal of this course is to present and/or remind the basics of statistical analysis, with special emphasis on the planning of the experiments and the analysis of experimental data in the field of Life Sciences.

- o Why use Statistics. Populations and samples. Basics of probability. Random variables.
- o Frequency distributions; what is a statistical test: power and protection of a test, Type I and Type II errors.
- o The χ^2 test. Goodness-of-fit test and comparisons between proportions.
- o The General Linear Model (GLM) and the model of Analysis of Variance (ANOVA).
- o One-Way ANOVA: the completely randomised and the randomised block designs.
- o Two-Ways ANOVA: the factorial design.
- o Linear regression models, parameters estimate in linear, multiple and curvilinear regression.
- o Some basics of multivariate analysis.
- o Use of statistical software. Examples in R.

Classes will be held at 8:30 AM on

Monday 9	(h. 9:30 - 13:30)	Room BS (via Celoria 26)
Tuesday 10	(h. 9:30 - 13:30)	Room 210 (via Celoria 20)
Monday 16	(h. 9:30 - 13:30)	Room Beta (via Celoria 18)
Tuesday 17	(h. 9:30 - 13:30)	Room BS (via Celoria 26)
Monday 23	(h. 9:30 - 13:30)	Room BS (via Celoria 26)
Tuesday 24	(h. 9:30 - 13:30)	Room BS (via Celoria 26)
Monday 30	(h. 9:30 - 13:30)	Room BS (via Celoria 26)
Tuesday 31	(h. 9:30 - 13:30)	Room BS (via Celoria 26)

The participants to the course are invited to bring a pocket calculator for some (simple) hands-on analyses