

Monday 10th January 2022
through
Monday 31st January 2022

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 10	(h. 8:30 - 12:30)
Tuesday 11	(h. 8:30 - 12:30)
Wednesday 12	(h. 8:30 - 12:30)
Monday 17	(h. 8:30 - 12:30)
Tuesday 18	(h. 8:30 - 12:30)
Wednesday 19	(h. 8:30 - 12:30)
Monday 24	(h. 8:30 - 12:30)
Monday 31	(h. 8:30 - 12:30)

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