

Program of the Course of Biostatistics
Prof. Giorgio Binelli
Gennaio 2019

Thursday 10, h. 8:30 - 12:30
Friday 11, h. 8:30 - 12:30
Monday 14, h. 8:30 - 12:30
Tuesday 15, h. 8:30 - 12:30
Monday 21, h. 8:30 - 12:30
Tuesday 22, h. 8:30 - 12:30
Monday 28, h. 8:30 - 12:30, practice lesson in the informatics room
Tuesday 29, h. 8:30 - 12:30, practice lesson in the informatics room

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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.

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

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