COURSE IN BIO-STATISTICS
Pasquale Chieco
May 8, 2019, h 14-18
May 9, 2019, h 9-13
University of Bologna
Via Francesco Selmi 3, Farbiomot Room

Programme of the course

Module 1: Overview and Data preparation
Variables and preliminary distribution analysis
Brief rational of canonical tests for inferential statistics
Statistical software organization for input & output
Worksheet arrangement for statistical analysis

Module 2: Brief hints on normal data distribution
Samples and populations
Normal distribution and Box plots graphical analysis
Terminology: mean, median, mode, percentiles, etc.
Central limit theorem
Confidence interval
Data Transformations

Module 3: Univariate analyses of real variables
Replicates & subjects
One sample, unpaired and paired t tests
One way ANOVA-Model 1 (fixed effects)
Uniformity of variances
Post-hoc tests
Non-parametric statistics
Decision tree
Practical examples from audience

Module 4: ANOVA
Two-way ANOVA
Factorial ANOVA
Interactions
Repeated Measures ANOVA
(Brief hints on One-way ANOVA-Model 2 (random effects)
(Brief hints on variance components and nesting)
Practical examples from

Module 5 (*only if there is sufficient time*): Regression
Correlation and simple regression
Fit line
Brief hints on residuals and diagnostic regression analysis
Brief hints on linear models and General linear models