

Statistical methods for experimental data

Organization and carrying out: prof. Idzi Siatkowski-Head of the Department of Bioinformatics in the Chair of Mathematical and Statistical Methods, Poznań University of Natural Sciences 20

hours: lectures + computer workshops

Courses will take place in a lecture room in the building of IPG PAS, all PhD students are asked to bring laptops.

- 1. Basic calculations (2 hours)**
- 2. Calculations for large data sets (2 hours)**
 - 2.1. Loading data of various formats
 - 2.2. Data analysis
- 3. Data visualization (2 hours)**
- 4. Nonparametric testing (2 hours)**
 - 4.1. Introduction
 - 4.2. Two Populations
 - 4.3. Analysis of variance for many populations
 - 4.4. Multiple nonparametric tests
- 5. Multivariate statistical analysis (4 hours)**
 - 5.1. Analysis of variance MANOVA
 - 5.2. Principal Component Analysis
 - 5.3. Cluster Analysis
- 6. Nonlinear models (growth curves) (2 hours)**
- 7. Regressions (2 hours)**
 - 7.1. Formulas describing models
 - 7.2. Linear Regression
 - 7.3. Multiple regression
 - 7.4. Logistic regression
 - 7.5. Curvilinear regression
- 8. Experimental designs (2 hours)**
- 9. Exam (2 hours)**