BIOL3103 Analysis of Biological data

[15h+15h exercises] 2.5 credits

This course is taught in the 1st semester

Teacher(s): Éric Le Boulengé
Language: French
Level: Third cycle

Aims

Starting from the definition of a scientific question and of an experiment designed to answer it, particularly in the frame of the Master's thesis, the student shall learn to choose adequate statistical methods for analysing his results, to apply them and to critically interprete the results.
After completing this course, the student should be able to apply and interprete correctly the statistical methods pertinent for his research domain, and should have a broad understanding of the methods presented by his colleagues in relation to their own work.
4/ to write a management, manipulation and data analysis program with an evolved language like SAS.
5/ to understand the listings and results obtained. The course is mostly based on examples from the ecological domain but not exclusively.

Main themes

1) Choice of statistical methods adapted to the scientific questions of the students.
2) In-depth learning of the SAS programming language.
3) Statistical analysis of the student's data, critical discussion of the results.

Content and teaching methods

1) Presentation by each student, of a scientific question and of the experiment(s) planned for answering that question.
2) Deepening of the SAS programming language, complementary to the class of Biometry (BIOL 2150): Data Step, Manipulation of Data, Functions, Macro Language, PROC IML (Matrix language). Syntax of the procedures required for the students' research works.
3) Application of the analysis methods by the students, in teams, under the guidance of the teachers.
4) Presentation of their results by the students, group discussion.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

PREREQUISITE
Course BIOL 2150, Biometry, or an equivalent.
EVALUATION
The student's performance is evaluated on the basis of the presentation of his analysis results and of his progress through the year..
SUPPORT
There is no syllabus. This course is on iCampus. Reference books and interesting web sites are mentioned. Students' presentations liable to be proposed as examples will be archived on the site.

Other credits in programs

SC3DA/B	Diplôme d'études approfondies en sciences (Biologie)	(2.5 credits)