

- Faculté des sciences
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Statistics (3BL2185)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en biologie	Cours: 28 pg	Voir ci-dessous	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Automne

Equipe enseignante

R. Slobodeanu

Contenu

This course covers advanced linear models with normally distributed errors, including ANCOVA and multiple regression. It introduces generalized linear models (GLMs) with non-normal error structures, with particular emphasis on binomial data (proportions) and Poisson data (counts). Other topics are fixed and random factors in experimental design, the construction of mixed-effects models, and model selection techniques.

Forme de l'évaluation

Graded continuous assesment: homework assignments (40%) and in-class quizzes (60%).

Modalités de rattrapage

Reexamination next session, same year, must be organized directly with the professor (not in Pidex, please contact the professor).

Documentation

"The R Book" by Michael J. Crawley. Lecture notes and documentation available online on Moodle.

Pré-requis

'Introduction à la statistique et exercices' (3MT1012) or other first-year statistics course. You should be familiar with the following concepts: mean, variance, standard deviation, standard error, confidence limits, hypothesis testing, p-values, two samples t-tests, paired t-tests, analysis of variance (ANOVA), simple linear regression. You should also be mildly familiar with the software program R and with RStudio, otherwise it is strongly recommended to consult the followig freely available courses:

<https://www.datacamp.com/courses/free-introduction-to-r>

<https://www.codecademy.com/learn/learn-r>

<https://swirlstats.com/students.html>

Forme de l'enseignement

Teaching will include lectures and time in the computer room to analyze data.

Objectifs d'apprentissage

Au terme de la formation l'étudiant-e doit être capable de :

- Interpret statistical results
- Apply statistical techniques
- Formulate statistical hypotheses
- Structure an analysis of a data

Compétences transférables

- Communicate scientific results
- Conceptualise a decision starting from data

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