Schedule for the Module B2/ETX3 "Tools for complex data analysis"
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Date	Topic	Exam
2/11/20	Introduction: Data analysis, exploration and statistical modelling	
9/11/20	Self-organized preparation and revisiting of teaching materials. Assignment: Datacamp Introduction to R. Note deadline! No class.	
16/11/20	Linear regression model: Concept, calculation, assumptions and diagnosis; Confidence intervals	
23/11/20	Assessing hypotheses and simulation-based approaches: Critical evaluation of the concept of p-values; t-test ; Permutation, bootstrapping and cross-validation; Bias-variance trade-off	Exam 1
30/11/20	Unity of the linear model, interaction terms and multiple linear regression I: ANOVA, ANCOVA, interactions	
7/12/20	Supervised working on R exercises and with tutorials. **Participation optional.** Alternative: Self-organized preparation and revisiting of teaching materials.	
14/12/20	Multiple linear regression II: Modelling strategies and methods	Exam 2
04/01/21	Generalized linear model and log likelihood	
11/01/21	Supervised classification: Classification and regression trees	
18/01/21	Supervised working on R exercises and with tutorials. **Participation optional.** Alternative: Self-organized preparation and revisiting of teaching materials.	Exam 3
25/01/21	Introduction to multivariate analysis; Ordination and Principal Component Analysis (PCA)	Exam 4
01/02/21	Multivariate multiple Regression (Redundancy Analysis – RDA); Similarity and distance metrics; Non-metric multidimensional scaling (NMDS)	Exam 5
08/02/21	Unsupervised classification (Cluster analysis) Home project distribution	Exam 6