Schedule for the Module ETX3/B2 "Tools for complex data analysis"
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Date	Topic	Exam
25/10/21	Introduction: Data analysis, exploration and statistical modelling	
08/11/21	Linear regression model: Concept, calculation, assumptions and diagnosis; Confidence intervals	
15/11/21	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
22/11/21	Unity of the linear model, interaction terms and multiple linear regression I: ANOVA, ANCOVA, interactions	
29/11/21	Multiple linear regression II: Modelling strategies and methods	Exam 2
6/12/21	Supervised working on R exercises and with tutorials. **Participation optional.** Alternative: Self-organised preparation and revisiting of teaching material.	
13/12/21	Generalized linear model and log likelihood	Exam 3
20/12/21	Home assignment	
03/01/21	Home assignment submission	
10/01/22	Supervised classification: Classification and regression trees	
17/01/22	Introduction to multivariate analysis; Ordination and Principal Component Analysis (PCA)	Exam 4
24/01/22	Multivariate multiple Regression (Redundancy Analysis – RDA); Similarity and distance metrics; Non-metric multidimensional scaling (NMDS)	Exam 5
31/01/22	Unsupervised classification (Cluster analysis)	

07/02/22	Supervised working on R exercises and with tutorials. **Participation optional.** Alternative: Self-organised preparation and revisiting of teaching material.	Exam 6
14/02/21	Home project distribution	