Preliminary Schedule for the Module B2/ETX3 "Tools for complex data analysis"

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Date	Topic	Exam
21/10/19	Introduction: Data analysis, exploration and statistical modelling	
28/10/19	Self-organized preparation and revisiting of teaching materials. Assignment: Datacamp Introduction to R. Note deadline! **No class.**	
04/11/19	Linear regression model: Concept, calculation, assumptions and diagnosis; Confidence intervals	
11/11/19	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
18/11/19	Supervised working on R exercises and with tutorials. **Participation optional.** Alternative: Self-organized preparation and revisiting of teaching materials.	
25/11/19	Unity of the linear model, interaction terms and multiple linear regression I: ANOVA, ANCOVA, interactions	
02/12/19	Multiple linear regression II: Modelling strategies and methods	Exam 2
09/12/19	Supervised working on R exercises and with tutorials. **Participation optional.** Alternative: Self-organized preparation and revisiting of teaching materials.	
16/12/19	Generalized linear model and log likelihood	Exam 3
06/01/20	Supervised classification: Classification and regression trees	
13/01/20	Introduction to multivariate analysis; Ordination and Principal Component Analysis (PCA)	Exam 4
20/01/20	Supervised working on R exercises and tutorials. **Participation optional.** Alternative: Self-organized preparation and revisiting of teaching materials.	
27/01/20	Multivariate multiple Regression (Redundancy Analysis – RDA); Dissimilarity metrics; Non-metric multidimensional scaling (NMDS) and Multivariate GLMs	Exam 5
03/02/20	Unsupervised classification (Cluster analysis)	
10/02/20	Theoretical exam: 9:45; Practical exam from 10:00-11:00	Exam 6

	Students without own computer → EIII 50 PC room I Students with own computer → CIII-148 PC room V	