Schedule for the Module ETX3/B2 "Tools for complex data analysis"
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Date	Topic	Exam
23/10/23	Introduction: Data analysis, exploration and statistical modelling	
30/10/23	Linear regression model: Concept, calculation, assumptions and diagnosis; Confidence intervals	
6/11/23	Revision week. Supervised working on R exercises and with tutorials. **Participation optional.** Alternative: Self-organised preparation and revisiting of teaching material.	
13/11/23	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
20/11/23	Unity of the linear model, interaction terms and multiple linear regression I: ANOVA, ANCOVA, interactions	
27/11/23	Revision week. Supervised working on R exercises and with tutorials. **Participation optional.** Alternative: Self-organised preparation and revisiting of teaching material.	
4/12/23	Multiple linear regression II: Modelling strategies and methods	Exam 2
11/12/23	Revision week. Supervised working on R exercises and with tutorials. **Participation optional.** Alternative: Self-organised preparation and revisiting of teaching material.	
18/12/23	Generalized linear model and log likelihood	Exam 3
23/12/21-02/01/23	Christmas break	
08/01/24	Classification and regression trees	
15/01/24	Introduction to multivariate analysis; Ordination and Principal Component Analysis (PCA)	Exam 4
22/01/24	Revision week. Supervised working on R exercises and with tutorials. **Participation optional.** Alternative: Self-organised preparation and revisiting of teaching material.	
29/01/24	Multivariate multiple Regression (Redundancy Analysis – RDA); Similarity and distance metrics; Non-metric multidimensional scaling	Exam 5

	(NMDS)	
05/02/24		Exam 6