Preliminary schedule Module "Tools for complex data analysis"
Ralf B. Schäfer, University Koblenz Landau 2018/19

Date	Topic	Exam
22/10/18	Introduction: Data analysis, exploration and statistical modelling	
29/10/18	Self-organized preparation and revisiting of teaching materials. Datacamp assignment: Introduction to R. Note deadline! No class.	
05/11/18	Linear regression model: Concept, calculation, assumptions and diagnosis; Confidence intervals	
12/11/18	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
19/11/18	Unity of the linear model, interaction terms and multiple linear regression I: ANOVA, ANCOVA, interactions	
26/11/18	Self-organized learning with Datacamp assignment: Bayesian regression. Note deadline! No class.	
03/12/18	Multiple linear regression II: Modelling strategies and methods	Exam 2
10/12/18	Self-organized learning with Datacamp assignment: Mixed model. Note deadline! No class.	
17/12/18	Generalized linear model and log likelihood	Exam 3
07/01/19	Supervised classification: Classification and regression trees	
14/01/19	Introduction to multivariate analysis; Ordination and Principal Component Analysis (PCA)	Exam 4
21/01/19	Multivariate multiple Regression (Redundancy Analysis – RDA); Similarity and distance metrics; Non-metric multidimensional scaling (NMDS)	
28/01/19	Multivariate comparison of groups (Hotelling T^2, MANOVA, PERMANOVA), PERMANOVA, multivariate GLMs	Exam 5
04/02/19	Unsupervised classification (Cluster analysis)	
11/02/19	Theoretical exam: 9:45; Practical exam from 10:00-11:00 Students without own computer $\rightarrow$ PC room 1 Students with own computer $\rightarrow$ CIII-248	Exam 6