

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	
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	Univariate 1
19/11/18	Unity of the linear model, interaction terms and multiple linear regression I: ANOVA, ANCOVA, interactions	
26/11/18	Multiple linear regression II: Modelling strategies and methods; Bayesian regression	
03/12/18	Generalized linear model and log likelihood	Univariate 2
10/12/18	LMM and GLMM	
17/12/18	Supervised classification: Classification and regression trees	Univariate 3
07/01/19	Introduction to multivariate analysis; Ordination and Principal Component Analysis (PCA)	
14/01/19	Multivariate multiple Regression (Redundancy Analysis – RDA)	Multi 1
	Similarity and distance metrics; Non-metric multidimensional scaling (NMDS)	
21/01/19	Multivariate comparison of groups (Hotelling T^2 , MANOVA, PERMANOVA), PERMANOVA, multivariate GLMs	Multi 2
28/01/19	Unsupervised classification (Cluster analysis)	
04/02/19		Multi 3
07/02/18 14:00	Deadline for completing Datacamp assignments	

12/02/18	Practical exam from 10:00-11:00 Students without own computer → PC room 1 Students with own computer → CIII-248
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