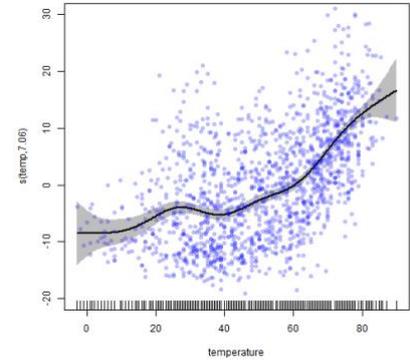# Statistics and Data Science Block Courses 2026
Theoretical Ecology Lab @ UR

Blockkurs – 54371
Introduction to Statistics and Data Science with R

Date: April 20-30 (6 days) 10:00 – 16:30 (in person, CIP-Pool WNDE DE. 0.135)
Topics: Repetition and practical implementation of all basic statistical procedures (e.g. common hypothesis tests, linear regression, ordination methods, visualization, project organization) in R. Introduction to simple machine learning techniques (e.g. Random Forest).
Instructor: Dr. Melina Leite

Blockkurs – 54375
Advanced Regression Models with R

Date: 15.06.2026 - 19.06.2026 (1 Week) 9:00 – 17:00 (via Zoom)
Topics: Applied regression analysis using linear and generalized linear mixed models, Random Effect structures, ANOVA, model checks for GLMMs, model comparison and model selection tools, causal inference, dispersion models, correlation (CAR) structures (e.g. temporal, spatial, phylogenetic), nonparametric methods for GLMMs
Instructor: Prof. Florian Hartig

Blockkurs – 54379
Machine Learning and Deep Learning with R

Date: 29.06.2026 - 03.07.2026 (1 Week) 9:00 – 17:00 (via Zoom)
Topics: Principles of ML and overview of a lgorithms, bootstrap, cross-validation, tuning, xAI methods. Introduction to Deep learning (DNNs, CNNs, RNNs, seq2seq, generative AI) in R with Tensorflow, Torch and cito.
Instructor: Dr. Maximilian Pichler

Blockkurs – 54378
Introduction to Bayesian Statistics

Date: 14.07.2026 - 16.07.2026 (3 days) 9:00 – 17:00 (via Zoom)
Topics: Bayesian Inference (prior, posterior, ...), posterior estimation via MCMC sampling, First Bayesian regressions (LM, GLM), Bayesian Model Selection (Bayes factor, Bayesian information criteria, Bayesian regularisation), Bayesian Workflow (conversion checks, model diagnostics, interpreting results, robustness checks), Hierarchical Models
Instructor: Prof. Florian Hartig

Detailed course descriptions, eligibility for modules and registration: go to https://go.uni-regensburg.de/j48ekjnk or use the QR code to the right and find the course you are interested in **SPUR** (our electronic lecture catalogue). Note that all courses require that you register via **GRIPS** (our online learning platform). The link for GRIPS page is always on the respective SPUR entry, and also on our website, which you find below.

External participants: follow the instructions at https://www.uni-regensburg.de/biologie-vorklinische-medizin/forschen/arbeitsgruppen/ag-hartig/teaching, section "external participants", to obtain a guest account at the University of Regensburg. With the guest account, you can then register in our online learning system (GRIPS) via the procedure described above.