Module name	**Computational Statistics**
Module number	CMS-TRK-ED4
Senior Lecturer	Dr Thomas Petzoldt thomas.petzoldt@tu-dresden.de
Qualification objectives	Students are able to choose statistical methods in a problem-oriented way, apply them interactively using the script language R and interpret the results responsibly.
Contents	The content of the module shall be based on data structuring, probability distributions, parameter estimation, confidence intervals, hypothesis testing, statistical modelling and model selection, linear and non-linear models, variance analysis and time series analysis.
Forms of teaching and learning	The module includes lectures of 2 SWS, exercises of 1 SWS and self-study. The teaching language of lectures and exercises may be German or English and will be specifically determined by the teacher at the beginning of each semester and announced in the usual manner.
Eligibility for participation	Knowledge of basic engineering mathematics, in particular linear equation systems, differential, integral and probability accounting, active computer skills, in particular spreadsheets, and basic knowledge of a bachelor-level programming environment are required.
Usability	In the Masters Course Computational Modeling and Simulation, the module is an optional module in the Track Computational Environmental Science and Engineering, to be selected in accordance with Annex 2 to the Specific Examination Regulations. The module cannot be chosen in the Master's Course Computational Modeling and Simulation if this or a module with substantially the same content from a Course with which the entry conditions under § 3 of the Studienordnung have been met has already been completed. The module provides the pre-requisites for the modules it designates under the pre-requisites for participation.
Conditions for the award of credits	Credits are awarded when the module test is passed. The module test consists of a 90-minute away day. The language of the test will be English.
Credits and marks	The module allows 5 credit points to be obtained. The module score corresponds to the test performance score.
Frequency of the module	The module is offered every winter semester.
Workload	The total workload is 150 hours.

Duration of the module	The module covers 1 semester.