

Module W1 11	Applied Data Science			
	Angewandte Data Science			
	Module type		Elective	
	Module ID number		-	
	Credit points (LP)		5 LP	
	Semester hours per week (SWS)		3 SWS	
	Semester	3rdsemester	Workload (total)	
	Term	Every fall semester (fall term)	of which	Classroom hours
	Duration	1 semester		Self-study
Qualification objective:	Students can use the statistical programming language R in combination with the R-Studio development environment. They know core elements of data science work and can independently develop and execute strategies for solving data science problems using the programming languages R and Quarto. Students can prepare raw data, visualize and analyze data using basic statistical techniques, and communicate their findings in the form of reproducible reports.			
Expertise:	Students are able to identify the relevant data science steps for a given problem and develop a suitable problem-solving strategy. In particular, they know the difference between supervised and unsupervised machine learning and can identify the appropriate approach for their problem. Students learn to identify the types of visualization and modeling relevant to answering a question and can critically analyze visualizations and modeling results of others.			
Methodological competence:	Students will be able to use the R programming language. Students will be able to find, install, and use R packages relevant to their problem-solving strategy. They can create reproducible analysis reports in HTML and PDF format and describe their results in a way that is appropriate for the target group. They can import raw data with help and transform it into an ordered format ('data wrangling'). They will be able to identify and create visualization forms relevant to your research question. They can estimate and interpret basic regression models using R, and communicate the results in a visually appealing way.			
Social and personal skills:	Students learn to independently develop solution strategies for data science problems and to implement them - alone or in a team. They can critically analyze and classify quantitative research results and data visualizations that they encounter in everyday life. They can independently collect, compile, visualize and apply data and present their results in a transparent and reproducible manner.			
Course and study formats :	Seminar; Group work, tutorials, app-based self-study, instructional videos.			
Module coordinator:	Prof. Dr. Claudius Gräbner-Radkowitzsch			
Prerequisites:	Successful completion of Research Methods I and II modules is strongly recommended.			
Applicable degree program:	B.A. International Management – BWL			
Language of instruction:	English			
Comments / Other:	Part of Elective 1.			

W1 11: Submodule 1	<i>Applied Data Science</i>				
	<i>Angewandte Data Science</i>				
	Submodule number	-	Study format	Seminar	
	Semester hours per week (SWS)	3 SWS	Workload (submodule)	150 h	
	Module Type	Required	of which	Classroom hours	45 h
	Planned Participants	31		Self-Study	105 h
	Preliminary examinations	3 Quarto-Reports (on 3 - 6 data scientific or econometric problems)			
W1 11: Module exam	<i>Exam</i>				
	<i>Modulprüfung</i>				
	Exam number	-	Scope of the exam	120 min	
	Form of examination	Written exam	Exam preparation	0 h (see comments)	
	Graded exam?	Yes			
	Comments regarding the module exam	Graded exam in form of a Open-Book-Exam and three ungraded preliminary examinations (passed/failed) Exam preparation takes place during self-study for sub-module 1.			
Letzte Änderung: 05.02.2026					