

2019.HS

Module Name: Statistics	
Module Code	w.BA.XX.2Stat-WIN.XX
Module Description	Students understand the fundamental concepts of descriptive and inferential statistics to summarize and analyze data and apply the methods in a practical context.
Program and Specialization	Business Information Technology
Legal Framework	Academic Regulations BSc dated 29.01.2009, Appendix to the Academic Regulations for the degree programs in Business Administration, Business Information Technology, and Business Law, first adopted on 12.05.2009
Module Category	Module Type: Compulsory
	Program Phase: Main Study Period
ECTS	6
Organizational Unit	W Institut für Wealth & Asset Management
Module Coordinator	Martin Schnauss (scnu)
Deputy Module Coordinator	Ruben Seiberlich (seib)
Prerequisite Knowledge	w.BA.XX.2Mathe1.XX,w.BA.XX.2Mathe2.XX
Contribution to Program Learning Goals (Affected by Module)	<ul style="list-style-type: none"> § Professional Competence § Methodological Competence § Social Competence § Self-Competence
Contribution to Program Learning Objectives	<ul style="list-style-type: none"> Professional Competence § Knowing and Understanding Content of Theoretical and Practical Relevance § Apply, Analyze, and Synthesize Content of Theoretical and Practical Relevance § Evaluate Content of Theoretical and Practical Relevance Methodological Competence § Problem-Solving & Critical Thinking § Scientific Methodology § Work Methods, Techniques, and Procedures § Information Literacy § Creativity & Innovation Social Competence § Written Communication § Oral Communication § Teamwork & Conflict Management § Intercultural Insight & Ability to Change Perspective Self-Competence § Self-Management & Self-Reflection § Ethical & Social Responsibility § Learning & Change
Module Learning Objectives	<ul style="list-style-type: none"> Students... § know the programming language Python and program basic applications using statistical functions. § use suitable diagrams to represent data. § interpret diagrams. § apply regression analysis in a case-related way. § understand the concept of statistical indicators. § explain the central concepts of probability theory. § understand the importance of confidence intervals and hypothesis tests. § construct confidence intervals and hypothesis tests. § interpret the results of confidence intervals and hypothesis tests. § describe the (linear) relationship of paired variables. § interpret the results of linear single regressions. § analyze data using statistical evaluations. § work independently to complete the applied practice tasks assigned to them.

Module Content	§ Linear regression analysis using Python § Interpretation and application of Python § Distribution of sample statistics § Editing and displaying data § Statistical key figures: position, scattering mass, and general distance mass § Law of big numbers and probability § Limit theorem and estimation procedure (point and interval estimates) § Confidence intervals and hypothesis tests § Relationships between variables: cross tabulation and dispersion diagrams, covariances and correlations, linear regression model with an independent variable		
Links to other modules	-		
Methods of Instruction	§ Lecture § Interactive Instruction § Application Tasks § Exercises § Problem-Oriented Teaching § Project Work	Social Settings Used: Individual Work	
Digital Resources	§ Teaching Videos § Practice and Application Exercises (with Key) § Multiple Choice Tests		
Type of Instruction	Classroom Instruction	Guided Self-Study	Autonomous Self-Study
Large Class	28 h	-	
Small Class	28 h	56 h	
Group Instruction	-	-	
Practical Work	-	-	
Seminar	-	-	
Total	56 h	56 h	
Performance Assessment			
End-of-module exam	Form	Length (min.)	Weighting
Written exam	Specified documentation	60	75,00 %
Permitted Resources	Approved calculator according to "Guidelines on Supplementary Materials"	With dictionary	
Others	Assessment	Length (min.)	Weighting
Written Assignment	Grade	-	15,00 %
Talk/oral presentation	Grade	20	10,00 %
Classroom Attendance Requirement	-		
Language of Instruction/Examination	German		
Compulsory Reading	§ McKinney, W. (2018). Datenanalyse mit Python. 2. korrigierte edition. O'Reilly. ISBN 978-3-96009-080-9. Available online in the ZHAW library. § Newbold, P., Carlson, W. & Thome, B. (2013). Statistics for Business and Economics. 8th edition. Upper Saddle River: Pearson Prentice Hall. ISBN 978-0132745659. § Bachmann, O., Bänziger, A. & Gramespacher, T. (2014). Übungsband zur angewandten Statistik: Mit einer Einführung in die Ökonometrie-Software. 2nd edition. Zürich: Compendio. ISBN 978-3-7155-9924-3.		
Recommended Reading	-		
Comments	Supplementary literature will be published on Moodle for different assignments and topics: - tasks for the lectures - weekly practice assignments An introduction to Python and Jupyter Notebook will be provided in the first lesson, so you will need to bring your laptop.		