

Valid from 2024.HS

Module description: Quantitative Methods	
Module Code	w.MA.XX.QNM-PiE.19HS
ECTS Credits	6
Language of Instruction/Examination	English
Module Description	<p>This module, which is part of the Master's program in Banking and Finance, focuses on key statistical analysis and empirical research topics. Students will develop a strong foundation in applying statistical techniques to practical issues and enhance their problem-solving abilities using scientific methods. The module covers various essential concepts and methods, including hypothesis and non-parametric tests, linear and logistic regression models, statistical inference, diagnostics, and time series analysis. By completing this module, students will acquire the necessary skills to interpret scientific findings, apply statistical methods to real-world problems, and approach practical challenges systematically and analytically. These skills will empower graduates to contribute effectively to applied research and confidently navigate decision-making processes in various professional settings.</p>
Organizational Unit	IWA Ltg.
Module Coordinator	Marc Weibel
Deputy Module Coordinator	Ruben Seiberlich
Program and Specialization	<ul style="list-style-type: none"> <li>Banking and Finance (PiE)</li> </ul>
Legal Framework	Academic Regulations MSc in Banking and Finance dated 29.09.2011, Appendix to the Academic Regulations for the degree program in Banking and Finance, first adopted on 28.08.2012
Module Category	<b>Module Type</b> Compulsory
Prerequisite Knowledge	Students need a basic knowledge of mathematics and statistics at BSc level as well as knowledge and experience in researching and processing scientific literature and in writing a scientific paper.
Contribution to Program Learning Objectives (by the concerned Module)	<ul style="list-style-type: none"> <li>Professional Competence</li> <li>Methodological Competence</li> <li>Social Competence</li> <li>Self-Competence</li> </ul>
Contribution to Program Learning Objectives	<p><b>Professional Competence</b></p> <ul style="list-style-type: none"> <li>Knowing and Understanding Content of Theoretical and Practical Relevance</li> <li>Apply, Analyze, and Synthesize Content of Theoretical and Practical Relevance</li> <li>Evaluate Content of Theoretical and Practical Relevance</li> </ul> <p><b>Methodological Competence</b></p> <ul style="list-style-type: none"> <li>Problem-Solving &amp; Critical Thinking</li> <li>Scientific Methodology</li> <li>Work Methods, Techniques, and Procedures</li> <li>Information Literacy</li> <li>Creativity &amp; Innovation</li> </ul> <p><b>Social Competence</b></p> <ul style="list-style-type: none"> <li>Written Communication</li> <li>Oral Communication</li> <li>Teamwork &amp; Conflict Management</li> <li>Intercultural Insight &amp; Ability to Change Perspective</li> </ul> <p><b>Self-Competence</b></p> <ul style="list-style-type: none"> <li>Self-Management &amp; Self-Reflection</li> <li>Ethical &amp; Social Responsibility</li> <li>Learning &amp; Change</li> </ul>

## Module description: Quantitative Methods

Module Learning Objectives	Students... <ul style="list-style-type: none"><li>• can plan and implement research on application-oriented topics using appropriate methods and common tools.</li><li>• can, whenever required, familiarize themselves independently with special methods and resources they have not used before.</li></ul>																																	
Module Content	<ul style="list-style-type: none"><li>• Statistics</li><li>• Non-parametric tests</li><li>• Linear regression analysis</li><li>• Logistic regression</li><li>• Diagnostics</li></ul>																																	
Links to other modules	This module is linked to the following modules: <ul style="list-style-type: none"><li>• w.MA.XX.OBFC-PiE.19HS</li><li>• w.MA.XX.AQM-PiE.19HS</li></ul>																																	
Digital Learning Resources	<ul style="list-style-type: none"><li>• Practice and Application Exercises (with Key)</li><li>• Case Studies (with Key)</li><li>• Multiple Choice Tests</li></ul>																																	
Methods of Instruction	<ul style="list-style-type: none"><li>• Interactive Instruction</li><li>• Literature Review</li><li>• Lecture</li><li>• Case Studies</li><li>• Application Tasks</li><li>• Exercises</li><li>• Problem-Oriented Teaching</li></ul>		Social Settings Used: <ul style="list-style-type: none"><li>• Individual Work</li></ul>																															
Type of Instruction	<table><tr><td></td><td>Classroom Instruction</td><td>Guided Self-Study</td><td colspan="2">Autonomous Self-Study</td></tr><tr><td>Lecture</td><td>72 h</td><td>-</td><td colspan="2"></td></tr><tr><td>Excercise</td><td>-</td><td>68 h</td><td colspan="2"></td></tr><tr><td>Project Work</td><td>-</td><td>-</td><td colspan="2"></td></tr><tr><td>Seminar</td><td>-</td><td>-</td><td colspan="2"></td></tr><tr><td>Total</td><td>72 h</td><td>68 h</td><td colspan="2">40 h</td></tr></table>					Classroom Instruction	Guided Self-Study	Autonomous Self-Study		Lecture	72 h	-			Excercise	-	68 h			Project Work	-	-			Seminar	-	-			Total	72 h	68 h	40 h	
	Classroom Instruction	Guided Self-Study	Autonomous Self-Study																															
Lecture	72 h	-																																
Excercise	-	68 h																																
Project Work	-	-																																
Seminar	-	-																																
Total	72 h	68 h	40 h																															
Performance Assessment	<table><tr><td colspan="2">End-of-module exam</td><td>Form</td><td>Length (min.)</td><td>Weighting</td></tr><tr><td colspan="2">Written exam</td><td>open book</td><td>60</td><td>100.00</td></tr><tr><td colspan="2">Permitted Resources</td><td>Free choice calculator</td><td colspan="2">With dictionary</td></tr><tr><td colspan="5"></td></tr><tr><td>Others</td><td>Assessment</td><td>Format</td><td>Length (min.)</td><td>Weighting</td></tr><tr><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr></table>				End-of-module exam		Form	Length (min.)	Weighting	Written exam		open book	60	100.00	Permitted Resources		Free choice calculator	With dictionary							Others	Assessment	Format	Length (min.)	Weighting	-	-	-	-	-
End-of-module exam		Form	Length (min.)	Weighting																														
Written exam		open book	60	100.00																														
Permitted Resources		Free choice calculator	With dictionary																															
Others	Assessment	Format	Length (min.)	Weighting																														
-	-	-	-	-																														
Classroom Attendance Requirement	None																																	
Compulsory Reading	<ul style="list-style-type: none"><li>• Newbold, P. &amp; Carlsen, W. &amp; Thorne, B. (1967). Statistics for Business and Economics. 8th Edition. Prentice Hall. ISBN 978-0273767060.</li></ul>																																	
Recommended Reading																																		
Comments	Students can earn points throughout the semester that can be credited toward their end-of-module exam. Various tasks and projects are offered during the course of this module, enabling students to enhance their understanding and application of quantitative methods continuously. The accumulated points contribute to the overall module assessment, encouraging students to actively participate in their learning progress and track their performance throughout the semester.																																	