Valid from 2026.FS

Module description: Data Analysis and Presentation in Excel and Python

Module Code	w.BA.XX.WPM-DAP.XX
ECTS Credits	3
Language of Instruction/Examination	English
Module Description	Students will acquire the knowledge necessary to deal with data preparation, analysis, and presentation tasks in Excel and Python. Excel: A special focus will be placed on charts and user-defined (lambda) functions. Python: We will mainly use the pandas and matplotlib. Students will also learn how to automate tasks and access AI services via APIs.
Organizational Unit	Institut für Risk & Insurance
Module Coordinator	Johannes Gerd Becker
Deputy Module Coordinator	Jürg Portmann
Program and Specialization	• Elective module (see module table)
Legal Framework	Academic Regulations BSc dated 29.01.2009, for the degree programs in Business Administration, International Management, Business Information Technology, Business Law, Business Law and Applied Law, first adopted on 12.05.2009
Module Category	**Module Type** Compulsory Elective **Program Phase** Main Study Period
Prerequisite Knowledge	Knowledge of basic descriptive statistics would be helpful.
Contribution to Program Learning Objectives (by the concerned Module)	• Professional Competence • Methodological Competence • Social Competence • Self-Competence
Contribution to Program Learning Objectives	**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 **Self-Competence** • Self-Management & Self-Reflection • Ethical & Social Responsibility • Learning & Change

Module description: Data Analysis and Presentation in Excel and Python

Module Learning Objectives

Students...
- can clean datasets.
- explore and analyze data.
- express business logic using spreadsheet formulas and code.
- automate data analysis tasks in Python.
- present data using appropriate diagrams.
- can find appropriate resources for self-study and problem-solving.

Module Content

- Array formulas
- Sorting, filtering, mapping, grouping, and aggregating data
- Vectors and matrices
- LAMBDA functions
- Data presentation and diagrams
- Basics of macros and VBA
- Working with Jupyter notebooks
- Reading and writing data
- Python basics
- Working with dataframes in pandas
- Data presentation with Python
- Automating tasks and accessing APIs with Python

Links to other modules

This module is linked to the following modules:
- w.BA.XX.3DSTI-RI.XX
- w.BA.XX.3FDS-BF.XX
- w.BA.XX.1QAB-IM.XX
- w.BA.XX.2Stat.XX

Digital Learning Resources

- Teaching Videos
- Spreadsheets
- Jupyter notebooks

Methods of Instruction

Social Settings Used:
- Individual Work
- Pair Work

Type of Instruction

	Classroom Instruction	Guided Self-Study	Autonomous Self-Study
Large Class	28 h	14 h	
Small Class	-	-	
Group Instruction	-	-	
Practical Work	-	-	
Seminar	-	-	
Total	**28 h**	**14 h**	**48 h**

Performance Assessment

End-of-module exam	Form	Length (min.)	Weighting
-			
Permitted Resources			

Others	Assessment	Format	Length (min.)	Weighting
End of semester exam	Grade	Einzelarbeit	90	60.00
Mid-semester exam	Grade	Einzelarbeit	90	40.00

Classroom Attendance Requirement

None

Module description: Data Analysis and Presentation in Excel and Python

Compulsory Reading	
Recommended Reading	
Comments	A relatively recent version of MS Office 365 for desktop computers is required. Office online or older versions of Office are not sufficient. Both exams consist primarily of tasks that must be solved using a PC.