Business Analytics

module description valid from 01/02/2026

General module information

module number	W.MSCIFM_BA01.25
type of module	C–Core Module
module level	I-Intermediate level
ECTS credits	6
module category	learning module (LM)
workload	
contact hours, in hrs	54.00
supervised self-study, in hrs	126.00
unsupervised self-study, in hrs	0.00
delivery / execution	autumn semester
regularity of in-person classes	weekly
module coordinator(s)	Imke Keimer (imke.keimer@hslu.ch)
teaching language	English

Record

record	The module provides students with a comprehensive introduction to modern analytical methods that are essential for data-driven decision making in organisations. It covers the full process of working with data, ranging from data structures and sampling to statistical inference and predictive modelling. Students develop a solid understanding of descriptive and inferential statistics, including confidence intervals, hypothesis testing, parametric and non-parametric procedures, correlation analysis, and both simple and multiple regression. The module also introduces non-linear regression and time-series analysis to address dynamic business questions. In the practical component, students work extensively with Microsoft Excel and learn to automate analytical tasks through Visual Basic for Applications (VBA). Through hands-on exercises and a research-oriented case study, they learn to prepare, analyse, and interpret quantitative information in order to derive insights that support managerial decisions. The module places particular emphasis on transparency, methodological rigour, and the critical evaluation of analytical results.

	By the end of the module, students are able to select appropriate analytical methods, implement them efficiently, and communicate their findings in a precise and objective manner.

Placement in the course of studies

degree programme / use	Master of Science in International Financial Management
further entry requirements	Glyn Davis, Branko Pecar: Business Statistics Using Excel, Chapter 1-4 Gordon Millar: Writing Dissertations: A Guide
minor / specialisation modules	W.MSCIFM_ARP02

Module content

learning objectives	Students choosing the correct method, applying statistical methods using Excel, interpreting statistical results, knowing the limitations of quantitative analysis. Students solve a given practical problem; students perform quantitative analysis; students can independently apply a set of quantitative methods; students choose the appropriate method; students are able to perform statistical analysis using statistical software (Excel); students can interpret the results of statistical analysis. Students are familiar with the most commonly used quantitative methods; students know the applications and limitations of different procedures; students can critically evaluate the use of quantitative methods. Students can discuss statistical methods and their application. They are able to present their results in a suitable manner. Students gain heightened awareness of the human tendency to overestimate their knowledge. Students are able to deepen their knowledge independently.
learning content and structure	01 Databases Introduction to ORBIS database 02 Logical Inference Fundamentals of logical reasoning as a basis for analytical thinking and decision making. 03 Sampling Sampling methods, representativeness, and implications for data quality. 04 Basics in Statistics Descriptive statistics and foundational concepts for quantitative analysis. 05 Confidence Intervals Estimating population parameters and assessing statistical uncertainty. 06 Basics Hypothesis Testing Principles of hypothesis testing and decision rules.

	07 Bias Identification and interpretation of biases affecting data and analysis. 08 Parametric Hypothesis Testing Parametric tests for one-sample and two-sample comparisons, including dependent and independent samples, with a focus on mean-based inference. 09 Excel Functions Essential Excel tools including an introduction to VBA. 09 Non-Parametric Hypothesis Testing Statistical tests that do not rely on distributional assumptions. 10 Research Case Study Independent end-to-end analysis of a raw dataset, including data cleaning, preparation, modelling, interpretation, and presentation of results. 11 Correlation Analysis of linear relationships between quantitative variables. 12 Simple Regression Modelling and interpreting single-variable predictive relationships. 13 Multiple Regression Predictive modelling with multiple explanatory variables. 15 Non-Linear Regression Modelling complex, non-linear relationships in business data. 16 Time-Series Analysis Analysing and forecasting temporal patterns in business-relevant data.
teaching and learning methods	Contact Hours: lecture, exercises, case studies, group work Directed Study: individual work, partner work, compulsory reading
Learning objectives acc. the competency model	Graduates demonstrate the subject-expertise required to manage organizations in their field of business. Graduates apply research-based problem-solving skills. Graduates create innovative, research-based solutions in practically oriented settings. Graduates implement innovative, research-based solutions in practically oriented settings. Graduates critically evaluate the impact of their solutions. Graduates present research-based solutions through functionally appropriate forms of communication. Graduates know the strengths and weaknesses, and the effects of their own personality in business contexts. Graduates demonstrate resilience when confronted with difficult individual, societal, and international business team situations.

Assessed assignment

grading scale	HSLU.Halbe Noten
examination/assessment 1	
art	written examination/assessment
form	assessed assignment

time	end of semester/block week
in group	Yes
weighting	30 %
electronic	no
comments	The implementation modalities can be adjusted by announcing the framework conditions for the module examinations. Only those who have fulfilled the examination requirements during the semester will be admitted to the examination.
examination/assessment 2	
art	written examination/assessment
form	individual examination
time	end of semester/block week
scope	90.00 Minute(s)
weighting	70 %
electronic	no
comments	The implementation modalities can be adjusted by announcing the framework conditions for the module examinations. Only those who have fulfilled the examination requirements during the semester will be admitted to the examination.

Comments

comments	The implementation modalities may be adjusted by announcing the framework conditions for the module examinations.

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