5409653 Business Statistics 2

Module Code	Module Name		Planned semester
5409653	**C19 Business Statistics**		1
Term	**Type**	**Niveau**	**Modulstatus**
WS 22/23	Compulsory module	4	
ECTS-Credits	**Taught units/semester**		**Private study time**
3.0	30.0 L / 22.5 h		67.5 h

Current status
In Modulplanung

Programme
- Master's degree programme in Information Systems (01.09.2019)

Module coordinator
Prof. Dr. Pavel Laskov

Lecturer
Prof. Dr. Klaus Frick

Course
- Business Statistics

Content

Business Statistics covers statistical methods that are used to support decision-making in business contexts, so it also provides a methodological foundation for the students' master's thesis projects. The course builds on the basic concepts of statistical testing and estimation theory that are usually taught in bachelor's programmes. The course covers five primary topics:

- Graphic and numeric characterizations of random variables and their distributions
- Framework and basic applications for testing hypotheses and estimating parameters
- The ordinary least squares (OLS) method
- Simple linear regression, including parameter estimation, diagnostic plots, hypothesis testing, predictions, and model specifications using log-transformations
- Introduction to the software package R

Learning Outcomes
After successful completion of the course, students will:

- be able to present the distributions of random variables graphically and to calculate and interpret their moments
- understand the framework of testing hypotheses and estimating parameters
- know the assumptions made in basic testing and estimating procedures when drawing general conclusions
- be able to derive the minimum sample size for basic testing and estimation procedures
- be able to apply the ordinary least squares method to derive estimators and compare their statistical properties
- be able to explain the classic linear model assumptions, run simple linear regressions, check the diagnostics plots, use log-transformations to specify models, and interpret the results correctly

Methods
- The module involves interactive lectures with exercises to integrate theoretical knowledge with practical design and analysis skills.
- Students complete homework assignments after each lecture.
- The e-learning platform Moodle is used throughout the course to disseminate course material and for information and discussion.

Requirements
Basic knowledge of probability theory and statistics, which are usually taught in bachelor's programmes, is required. The module *Statistik* in the Bachelor's Degree Programme in Business Administration at the University of Liechtenstein benchmarks the knowledge that is required to register for the course.

Literature

Compulsory reading:

> Berensen, M.L., Levine, D., & Szabat, K.A. (2014). Basic Business Statistics (13th edition). Essex: Pearson Education Limited.

Examination Procedure
Written exam (60min)
To successfully pass the module, students must collect at least 50 percent of points in a final exam (60 minutes; 30 points in total). During the exam, students may use a self-created “cheat sheet” (DIN A4, double-sided, machine-written or handwritten, any contents) and a calculator of their choice (including programmable calculators).