

Econometrics

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1. Course Overview

This course covers basic theory on econometrics as well as applied econometrics, in particular understanding quantitative output. Each lecture is accompanied with practical exercises using the statistics program SPSS.

2. Course Objectives and Learning Outcomes

Students shall be able to apply the theoretical knowledge in econometrics to different given problems and own research questions:

1. Conducting applied quantitative research
2. Understanding quantitative output
3. Understanding basic theory
4. Working with SPSS

3. Contents

Data Analysis – Theory and Application

- Repetition Hypothesis Testing
- Covariance and Correlation
- Analysis of Variance
- Linear Regression
- Logistic Regression

Application of Statistical Knowledge

- Specification and hypothesis testing
- Estimate causal effects after controlling for the confounding effects of other variables
- Drawing inferences based on empirical evidence

4. Teaching Methods

As a foundational course this course is primarily based on weekly lectures (theory and exercises), computer lab sessions, and in-class discussions.

Learning occurs through a combination of

- Face-to-face lectures and open discussion
- Assigned academic readings
- Extended self-study

Working with SPSS – Statistics Programm (Computer Lab)

- Available in the computer labs

Working at home:

- student license (20 Euro) with basic features:
- <https://www.studyhouse.de/cgi-bin/product/spss-statistics-studypack-ibm-spss4student-statistik-linux-windows-P10012713>
- or virtual access to SPSS (see ILIAS)

5. Examination and Assessment Requirements (LKBK)

The assignment and grade consists of two key components: homework and final exam

- Homework – group work (45%): there are three SPSS exercises, which can be solved at home in groups up to 4 students. Each homework counts 15% of the final grade.
- Individual final exam (55%): The written exam (90 minutes) covers the theoretical knowledge as well as the interpretation of SPSS output. **The final exam has to be passed to pass the course.**

6. Required Reading

Backhaus, K., Erichson, B., Plinke, W., Weiber, R. (2016). *Multivariate Analysemethoden – Eine anwendungsorientierte Einführung*. Berlin: Springer, 12. Auflage

Field, A. (2017). *Discovering Statistics Using IBM SPSS Statistics*. London: SAGE Publications.

Gujarati, D., N. (2004). *Basic Econometrics*. McGraw-Hill.

Lewis-Beck, M. S. (1980). *Applied Regression – an Introduction*. Sage University Papers Series on Quantitative Applications in the Social Sciences. Thousand Oaks, CA: SAGE Publications.

Mendenhall, W., Reinmuth, J., & Beaver, R. J. (1993). *Statistics for Management and Economics*. 7th Edition. Duxbury Press.

Pampel, F. C. (2000). *Logistic Regression*. Sage University Papers Series on Quantitative Applications in the Social Sciences, 07-132. Thousand Oaks, CA: SAGE Publications.

7. Links to other courses

Research methods and statistical knowledge, as foundational academic knowledge, directly relate to all other courses when it comes to correctly interpret academic work, research results, statistics, etc. and reflect academic and non-academic articles.