



PRINCIPLES OF DATA ANALYSIS COURSE OUTLINE AND READING LIST

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SUMMER TERM 2019

1 COURSE OVERVIEW

Course Name:	Principles of Data Analysis (8120551)
Degree Programmes:	(1) Master BWL (IEM & CDS) (2) Master Wirtschaftsingenieurwesen (IEM & CDS) (3) Master Wirtschaftswissenschaften (IEM, CDS & GM)
Lecturer:	PD Dr. David Antons
Contact:	David Antons (antons@time.rwth-aachen.de) www.time.rwth-aachen.de/tim
Location and Time:	<u>Lab Sessions:</u> 12.4., 26.4., 3.5., 10.5., 17.5., 24.5. (9am to 12 noon), C.Le.Ver, Johannerstr. 22-24, 52064 Aachen <u>Final Colloquium:</u> Friday, 12 July 2019 (9am to 1pm), Room B301 in Kackerstraße 7, 52072 Aachen <u>Handing in the research paper:</u> Friday, 9 August 2019
Content Description:	This course provides students the opportunity to learn various methods of statistical data analysis. Statistical methods are the foundation of empirical management research. In addition, they are increasingly used in business practice to make evidence-based decisions. The course focuses on the practical application rather than on the theoretical depth of the methods. The module is based on a typology of typical questions that scientists and managers face when they receive data sets of companies. The module provides a decision tree which assigns statistical methods to typical questions. Equipped with this decision tree, the practical application of the various methods is explained in the course and demonstrated in the statistics program Stata. This is followed by practical exercises to deepen the understanding of the contents and to practice working with the statistics program. It will be the task of the students to first complete the exercises independently but accompanied by the lecturer. In addition, the students will transfer the learned methods to their own analyses. For this purpose, the chair provides a suitable data set.
Qualification Objectives:	By participating in this course, students will (1) gain in-depth theoretical insights into empirical social research (research designs, research methodology), (2) develop methodological competence by gaining initial experience in statistical analysis and handling of the Stata program, (3) gain insights into the process of empirical research projects in the field of business administration, (4) report research findings in a short research paper, (5) present research findings in a scientific presentation.
Course Examination:	(1) Research Paper (80%) (2) Research Presentation (Colloquium) (20%)
Group Size:	Due to the interactive teaching format and space constraints in the computer lab, the number of participants is limited to 18.

Workload:	32 hours of lecturing, lab sessions, and presenting and 118 hours of individual working
Type of Teaching Event:	Research-Oriented Session with weekly lab sessions
Language:	German/English
Credits:	5

2 COURSE ORGANISATION

The students are first introduced to the topic and the concept of the module. The theoretical and methodological basics of statistical analysis will be presented and discussed. The introduction to the methodology will take place in a flipped classroom approach with video lectures.

The students are divided into working groups, in which the further module is carried out. Following an introduction to the statistics program Stata, students are given the opportunity to specify their own analyses accompanied by the lecturer. The results of the empirical-quantitative analysis will be presented in a research paper.

- **Lab Sessions:** 12.4.19, 26.4.19, 3.5.19, 10.5.19, 17.5.19, 24.5.19
- **Time:** 9am to 12 noon
- **Place:** C.Le.Ver (Johanniterstr. 22-24)
- **Research Presentation:** Friday, 12 July 2019 (9am to 1pm),
Room B301 in Kackerstraße 7, 52072 Aachen
- **Deadline for Research Paper:** Friday, 9 August 2019 (Secretariat of the Institute)

3 ASSIGNMENT

- Group work I (20%): Research Presentation (Colloquium) (20min)
- Group work II (80%): Research Paper (maximum 3.000 words)
Language of the paper is German or English (group consensus)

4 EVALUATION MODE

The research paper which counts for 80 percent of your final mark will be evaluated for the originality of the contribution, the structure of your arguments, the theoretical framing, the literature coverage, the methodological appropriateness, quality of writing and the formal execution.

The evaluation criteria for your research presentation are the structure of your presentation, the clarity of the arguments and your ability to respond to questions.

We hope you will enjoy the course and look forward to working with you!