



## Master Seminar Quantitative Research Methods

266.018, SS 2015

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### Seminar Description

This seminar will follow a modern data science approach. We will use R – one of the most popular statistical programming languages – hands-on throughout the course. You will learn how to apply statistical methods to practical research questions in management. You will understand the importance of reproducible research and create reproducible reports and presentations.

### Entry Requirements

- 18 ECTS credits in Strategic Management, Marketing, Organization, Human Resources & Change Management, Financial and Managerial Accounting.
- Basic understanding of quantitative research methods is highly recommended but not required.
- Programming skills are not required. However, you need to be prepared to write short computer scripts in R.

### Contents

- Introduction to the programming language R, reproducible research
- Research designs for collecting primary and secondary data, with a special focus on the internet as a data source
- Exploratory data analysis, statistical inference
- Regression models, principal component analysis
- Student project presentations

### Classes, Additional Work

Being a Master Seminar the course is on an advanced level. Students who do not have much prior knowledge in quantitative methods or in statistical programming will be able to catch up by investing more time in (guided) self-study.

### Grading

- Class Assignments: 60%
- Team research project: 40%
- A minimum of 80% attendance is required.

## Resources

1. Textbooks on basics:

David Diez, Cristopher Barr, and Mine Çetinkaya-Rundel (2014). *Introductory Statistics with Randomization and Simulation. First Edition*. CreateSpace Independent Publishing Platform. A free PDF version is available at [www.openintro.org](http://www.openintro.org).

Nina Zumel and John Mount (2014). *Practical Data Science with R*. Manning Publications Company.

Pervez N. Ghauri and Kjell Grønhaug (2010). *Research Methods in Business Studies*. 4th Edition. Financial Times Prentice Hall. Some copies are available in the JKU library.

Alternatively, for German speakers: Johannes M. Lehner and Alois Farthofer (2012). *Evidenzbasiertes Management. Methoden und Kompetenzen der Organisationsanalyse. Mit einführenden Beispielen zu R, Mathematica und SPSS*. Wien: Linde Verlag.

2. A PC (MacOS or Windows) to install R and RStudio (both are available for free). We will use RStudio extensively throughout the course.

## Schedule for Summer Semester 2015

(see KUSSS for possible changes)

Week	Time	Room	Topic
20.4.	13:45–17:00	MT 127	Seminar overview, introduction to programming language R
27.4.	13:45–17:00	MT 127	Reproducible research, knitr
11.5.	13:45–17:00	MT 127	Descriptive data analysis, ggplot
18.5.	13:45–17:00	MT 127	Statistical inference
1.6.	13:45–17:00	MT 127	Regression models
8.6.	13:45–17:00	MT 127	Team Presentations