

Statistics for Data Analytics

Jun.-Prof. Dr. Sven Otto

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Organization of the Course

Statistics for Data Analytics is a graduate-level introductory course in econometrics, focusing on estimation and inference in linear models, with practical applications in R.

Timetable

See [KLIPS](#) for a detailed schedule.

Lecture Material

- This online script: [Webpage](#) and [pdf version](#)
- eWhiteboard: lecture and exercises
- Problemsets and Rscripts: sciebo folder

Literature

The script is self-contained. To prepare well for the exam, it's a good idea to read this script.

The course is based on Stock and Watson, *Introduction to Econometrics (Fourth Edition)*, Chapters 1–9 and 14. The Stock and Watson textbook is available [here](#) (Uni Köln VPN connection required).

Further textbooks I can recommend:

- *Probability and Statistics for Economists*, by Bruce E. Hansen
- *Econometrics*, by Bruce E. Hansen
- *Econometric Theory and Methods*, by R. Davidson and J.G. MacKinnon ([link](#))

Printed versions of the books are available from the university library.

Day	Time	Lecture Hall
Thursday	10:00-11:30	XII (Main Building)
Thursday	12:00-13:30	XII (Main Building)
Friday	10:00-11:30	XVIII (Main Building)

Assessment

The course will be graded by a 90-minute written exam. There will be two optional bonus assignments during the lecture period. These assignments will allow you to earn bonus points that will be added to your overall exam score, but they are optional and not required to achieve the maximum score on the exam. For detailed information please visit the ILLIAS course.

Communication

Feel free to use the ILLIAS statistics forum to discuss lecture topics and ask questions. Please also let me know if you find any typos. Of course, you can reach me via e-mail: sven.otto@uni-koeln.de

Important Dates

Bonus assignment 1	tba
Bonus assignment 2	tba
Registration deadline exam 1	Nov 14, 2024
Exam 1	Nov 28, 2024
Registration deadline exam 2	Mar 03, 2025
Exam 2 (alternate date)	Mar 17, 2025

Please register for the exam on time. If you miss the registration deadline, you will not be able to take the exam (the Examinations Office is very strict about this). You only need to take one of the two exams to complete the course. The second exam will serve as a make-up exam for those who fail the first exam or do not take the first exam.

R-Packages

To run the R code of the lecture script, you will need to install some additional packages.

```
install.packages(  
  c("AER", "plm", "dynlm", "glmnet", "moments", "urca",  
    "tidyverse", "stargazer", "BVAR",  
    "palmerpenguins", "kableExtra", "scatterplot3d"))
```

Some further datasets are contained in my package `teachingdata`, which is available in a GitHub repository:

```
install.packages("remotes")  
remotes::install_github("ottosven/teachingdata")
```

See the ILIAS course on how to install `teachingdata2`.