UNIVERSITÄT HOHENHEIM

Prof. Dr. Robert Jung / MSc Domenic Franjic
Econometrics and Statistics (520K)
Faculty of Business, Economics and Social Sciences
Contact: econometrics@uni-hohenheim.de
Consultation hours: make an appointment by email

Course Outline winter term 2025-26

"Econometric Methods in Business and Economics"

Master's in International Business and Economics

Schedule:

- **Lecture class: Thursday 14:15 – 15:45, HS 1, Prof. R. Jung** (starts on 16.10.25)
- **Practical class: Monday 14:15 – 15:45, HS 17, Domenic Franjic** (starts on 20.10.25)

Objectives:

This course introduces students to econometric techniques widely used in economics, finance, and business research. It provides a modern overview of methods and models for analysing cross-sectional, time-series, and panel data, with a particular emphasis on the causal analysis of relationships using observational data.

Upon successful completion, students will be able to identify appropriate econometric methods for addressing empirical questions and provide a rigorous and meaningful interpretation of the results. Students who wish to do so will also gain experience in implementing these methods with statistical software, in particular R.

Grading:

A 90-minute paper-and-pen exam determines the final grade. A minimum of 50 out of 100 points is required to pass.

Bonus rule: Students can earn up to 25 points for the final exam through in-class online tests and a midterm exam held before the Christmas break. Details will be provided in class.

Exams will be closed-book. However, you may bring ‘cheat sheets’. Rules for the ‘cheat sheets’ will be provided on ILIAS.

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Online Statistics Review:

We strongly encourage you to refresh your statistics background.

A solid grasp of basic statistics (e.g. random variables, statistical distribution theory, hypothesis testing, estimation theory, confidence intervals and correlation) is essential to follow the course and actively participate in class. If you feel uncertain about any of these topics, please take some time to review them before the semester.

An ideal overview of the relevant topics and methods can be found in Chapters 2 and 3 of the course textbook of Stock and Watson.

A concise and freely accessible treatment of the material can be found in the handouts and slides available on the following website:

https://sites.google.com/view/econ-440/

For students who are already familiar with R, or who would like to learn R during this course, an alternative (or supplementary) treatment of the material is available here:

https://www.econometrics-with-r.org/

Flipped or inverted classroom design and course material:

The course is taught in a flipped (inverted) classroom format. Before each week's lecture class, students are expected to review the course materials provided on ILIAS. Completing this preparation will ensure that you can actively follow and benefit from the in-person class activities.

All course materials, problem sets, and additional materials will be available on the ILIAS platform.

The ILIAS course will be available under the following link:

https://ilias.uni-hohenheim.de/ilias.php?baseClass=ilrepositorygui&ref_id=1744722

You must provide your name, semester, and study program to access the ILIAS course.

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Practical class:

Domenic Franjic teaches the weekly practical class. This class is designed to reinforce key concepts and illustrate their practical application with real-world datasets. For interested students, examples and exercises using the statistical software package R will also be provided

Statistical software packages:

The solutions for the practical problem sets will be provided using the software package R. R is a free, open-source software package available from https://www.r-project.org/.

Literature:

The main textbook for this course is

Stock, J.H. and Watson, M.M. [SW] (2020). Introduction to Econometrics. 4th edition. Pearson.

Other reference:

Wooldridge, J. Introductory Econometrics. A Modern Approach, Cengage. Eds. 6, 7 or 8.

Course content

1. Introduction (SW Ch 1)
2. Linear Regression with One Regressor (SW Ch 4, 5)
3. Linear Regression with Multiple Regressors (SW Ch 6, 7)
4. Multiple Regression Analysis: Further Issues (SW Ch 8,9)
5. Regression Analysis with Panel Data (SW Ch 10)
6. Regression with a Binary Dependent Variable (SW Ch 11)
7. Instrumental Variables Regression and Causal Inference (SW Ch 12,13)
8. Many Regressors and Big Data (SW Ch 14)
9. Regression Analysis of Time Series Data (SW Ch 14,15)