Syllabus for "Econometrics I"

Winter 2025-26

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Time and location:

- Tuesday: 10:15 - 11:45, weekly (from 14/10/25), Hörsaal A [Mel]*
- Thursday: 14:15 - 15:45, weekly (from 16/10/25), Hörsaal XX [Mel]*
- Thursday: 16:15 - 17:45, weekly (from 16/10/25), Hörsaal B [Mel]*
- Monday: 16:15 - 17:45, weekly (from 20/10/25), Großer Hörsaal [WiWi]

* "Mel" stands for *Melanchthonianum*, a building located in Universitätsplatz 9.

We will start on Tuesday, the **14th of October** (note that our first Monday meeting takes place the second week). There is no sharp distinction between lectures and tutorials: we will have a mixture of both, spending roughly half of the time on tutorial-like exercises.

Contents:

- Multivariate OLS estimator: Coefficients, standard errors, significance, predictions, properties, asymptotic behavior.
- What variables should be included in a regression? Omitted variable biases, efficiency-bias tradeoff.
- Departures from the classical model: Heteroscedasticity, endogeneity, common mis-specifications.
- Basic applications: Dummies, fixed effects, limited dependent variables, introduction to time series and panel data.
- From correlation to causality: Basic methods to distinguish between them (experiments and quasi-experiments, difference in difference, instrumental variables).
- Hands-on analysis: handling databases, creating graphs, making simulations, running regressions, and producing result tables. We will use the free econometric software *R* (http://www.r-project.org/) and the user interface *Rstudio* (https://rstudio.com/products/rstudio/download/).

Examination:

Written examination on December 1, 2025 and February 23, 2006 (Großer Hörsaal [WiWi]). The exact date and location can be changed by the Examinations Office.

Literature:

- Wooldridge, J. (2020) *"Introductory Econometrics. A Modern Approach,"* 7th edition (available in library; other editions can be used too)
- Greene, W. (2019) *" Econometric Analysis,"* 8th edition (available in library; other editions can be used too)
- Heiss, F. (2020) *"Introductory Econometrics using R"* (available online: http://www.urfie.net/)