Lecture:
Semiparametric Methods in Econometrics and Applications
Chair of Labor Market Economics

Prof. Bernd Fitzenberger, PhD – Lecture
Julia Holleitner, M.Sc. – Exercise

This course presents nonparametric and semiparametric regression techniques which are part of the tool set of modern microeconometric methods and applications. The course covers saturated OLS regression, kernel density estimation, nonparametric regression, partially linear models, semiparametric selection models, inverse probability weighting, penalized regression models as well as parametric and nonparametric quantile regression as basic tools. These methods are used for cross-section data and longitudinal data. Students will familiarize themselves with applying the methods based on selected applications in economic research papers.

Students
- learn how to think of regression as modelling conditional expectations and features of conditional distribution
- learn that there is a bias and variance trade-off between choosing a flexible regression specification and obtaining precise estimates in light of the curse-of-dimensionality
- learn that flexible regression methods require the choice of tuning parameters and how to use statistical approaches to choose the tuning parameters
- learn how semiparametric methods are applied in real world econometric studies

Recommended prerequisites are a master-level introductory econometrics module („Applied Econometrics" or "Ökonometrie") (mandatory) and a further course (recommended) in microeconometrics such as "Panel and Evaluation Methods" or "Microeconometrics and Machine Learning".

The course can be integrated in the following Master programmes:
- Master Economics: Elective Area
- Master Arbeitsmarkt und Personal: Elective Area
- Master Sozialökonomik: Freier Vertiefungsbereich
- Master Management, Marketing, FACT, Gesundheitsmanagement und –ökonomie, IIS: Elective Area

The module is held each **winter semester**. Grading is based on a written examination (90 minutes). The workload is 24h for the course attendance and 40h for independent study. The course language is English.

The course (lecture/exercise) will take place from **16:45 - 20.30** at the following dates in room **FG 0.016**:

-   October 30 2024 [Lecture]

-   November 06 2024 [Lecture]

-   November 20 2024 [Exercise]

-   November 27 2024 [Lecture]

-   December 18 2024 [Lecture]

-   January 08 2025 [Lecture]

-   January 15 2025 [Exercise]

-   January 22 2025 [Exercise]

-   February 05 2025 [Q&A-Session]

The **exam** will be held in the beginning of February.

Recommended Reading:
-   Pagan, A. and A. Ullah (1999): Nonparametric Econometrics, Cambridge University Press.
-   Wooldridge, J. M. (2010): Econometric Analysis of Cross Section and Panel Data. 2nd edition, Cambridge, MA: MIT Press.

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