

## PhD Course

# MICROECONOMETRICS

Block course:

14.11.2017: 10:30 am - 05:00 pm

15.11.2017: 09:00 am - 05:00 pm

16.11.2017: 09:00 am - 05:00 pm

**Classroom:** 4029, Esplanade 36

**Course Instructor:** Prof. Stefan Hoderlein

**Course Value:** 5 ECTS

**Course Overview:** This course provides an introduction into modern Microeconometrics. We focus on the most commonly used models, and provide examples for their application.

**Topics:** We will cover linear regression analysis, including endogeneity and instrumental variable (2SLS). We will discuss identification, as well as details of estimation and inference that are relevant for applications, e.g., heteroscedasticity. Then we will discuss nonlinear models, in particular qualitative dependent variable models (e.g., Probit and Logit for binary choice) and models for count data, and their estimation via maximum likelihood (ML). Finally, we will also cover the most relevant treatment effect models under both endogeneity and exogeneity, as well as related models, including Diff-in-Diff and Regression Discontinuity Design. This part also includes a brief introduction into the most commonly employed nonparametric estimation techniques.

**Prerequisites:** We will make use of some elementary calculus and matrix algebra, and basic statistical concepts including random variables, conditional expectations, as well as inference.

**General literature:** While the course is self-contained, a good reference to read up on modern Microeconometrics is Wooldridge, J., *Econometric Analysis of Cross Section and Panel Data*. MIT Press, 2<sup>nd</sup> edition.

**Assessment:** Students will have to complete a take-home assignment analyzing and employing methods that will be the subject of the course.

**Teaching language:** English