

Econ 5122

Econometric Analysis and Applications

Course Outline

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Course Overview

This course is an introductory course on the applications of econometric analysis at the graduate level. The emphasis is on understanding and applying various methods, rather than on the study of the mathematical and statistical features of the estimators. Therefore, the level of mathematical sophistication in the course will not be particularly high.

Prerequisite

The students should be familiar with linear algebra, basic probability and statistics, and (multivariate) calculus.

Topics

- sample selection and random assignment
- causal inference, omitted variables
- linear and nonlinear models
- parameters estimation methods
- hypotheses testing
- panel data models
- discrete choice and censored data
- instrumental variables models
- regression discontinuity designs
- difference-in-differences

Course Assessment

1. Presentation of papers: 20%
2. Class participation: 5%
3. Two Empirical Assignments: 10%
4. Final Exam: 65%

Software

The course will require use of the econometric package *Stata*. There is a list of web-based tutorials for learning Stata: <http://www.stata.com/links/resources1.html>. The students can also get access to Stata via the computing cluster in the Department of Economics: <https://scrp.econ.cuhk.edu.hk/guide/stata>.

Reference Books and Materials

The required book: Angrist, Joshua and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics*. Princeton: Princeton University Press. We will also consult some of the following supplementary texts

1. Wooldridge, Jeffrey. 2002. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press
2. Cameron, Colin and Pravin Trivedi. 2005. *Microeconometrics: Methods and Applications*. Cambridge University Press.

The students are also required to read empirical papers related to this course. The papers can be downloaded from blackboard

Other useful econometrics books:

1. On introductory econometrics: Stock, James and Mark W. Watson, *Introduction to Econometrics*
2. On Stata: Cameron, Colin and Pravin Trivedi. 2009. *Microeconometrics Using Stata*. College Station, TX: Stata Press