

# Microeconometrics

Spring 2017

Syllabus

Time: Tu-Thu, 11am-12h15pm

Location: Graham Memorial - Rm 0035

Instructor: Valentin Verdier

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Office: GA 208B

Office hour: Thu 8h20am-9h20am

Textbook: Econometric Analysis of Cross Section and Panel Data, Jeffrey Wooldridge, 2010 (2nd edition)

## **Course objectives and organization:**

The objective of this course is for students to improve their understanding and knowledge of the tools available for analyzing micro data and to prepare for adjusting existing methods to their specific needs (or perhaps even come up with new methods).

While this course is designed with an archetypal applied micro student in mind, I will not look at actual data very much. Applying the methods seen here to data or to Monte Carlo simulations as a side exercise would be great though, I would be happy to discuss work you do in this direction.

The course will be split into two parts: The first part will look at fundamental topics in simplified settings, and the textbook will be a big help there, we have to learn to crawl before we learn to walk. The second part will look at special topics and will start whenever we are done with the first part. (I expect we will spend most of the semester on the first part.) You guys will choose the special topics, I have a list in the syllabus and we can include topics not listed.

**Grade:**

The grade will come from two in-class midterms and an in-class final, weighted 30% each, and from problem sets weighted a total of 10%. The midterms will take place during lecture time. The final will take place during the time slot allotted by the university registrar.

**Chapters to read before the start of the semester:**

Chapters 1, 2, 3. Also read chapter 4 if you want to get started on the material covered during the semester.

**Topics:****Fundamentals**

## A- Efficiency vs. Robustness

- 1- Single equation linear models (chapter 4)
- 2- Systems of equations, linear models (chapter 7)
- 3- Single equation non-linear models (chapters 12, 13, 14, 15)
- 4- Systems of equations, non-linear models (chapters 12, 13, 14, 15)

## B- Endogeneity

## 1- Cross-sectional data

- i- Linear models (chapters 5, 6, and 8, see chapter 9 for reference but not covered.)
- ii- Non-linear models (chapter 15)

## 2- Panel data

- i- Linear models (chapters 10 and 11)
- ii- Non-linear models (chapter 15)

## C- Dependence

## 1- Cluster sampling

## 2- Spatial dependence

## Special Topics

- Structural vs. reduced form debate
  - Heckman and Urzua JE 2010, Deaton JEL 2010, Imbens JEL 2010, Angrist and Pischke JEP 2010, Nevo and Whinston JEP 2010
- Regression discontinuity design
  - Hahn, Todd, Van der Klaauw Ecta 2001, Li and Racine's textbook, Fan and Gijbels 1992, Hansen's lecture notes: <http://www.ssc.wisc.edu/~bhansen/718/NonParametrics2.pdf>, Imbens and Lemieux JoE 2008, Imbens and Kalyanaraman ReStud 2012, Calonico, Cattaneo, Titiunik Econometrica 2014.
- Cross-sectional dependence
  - White 2001 textbook for cluster dependence, Conley Journal of Econometrics 1999, Jenish and Prucha JoE 2009 and 2012, Kuersteiner and Prucha JoE 2013, Kelejian and Prucha JoE 2007
- Social interactions
  - Manski Review of Economic Studies 1993, Graham Econometrica 2008, Goldsmith-Pinkham and Imbens JBES 2013,...
- Network formation
  - Chandrasekhar and Jackson 2015, Leung 2015, de Paula, Richards-Shubik, Tamer 2015, Menzel 2015, Graham 2015
- Optimal Instruments
  - Chamberlain 1987, 1992a, 1992b Donald, Imbens and Newey Journal of Econometrics 2009

- Dynamic Models of Panel Data
  - Arellano and Bond Review of Economic Studies 1991, Wooldridge Journal of Applied Econometrics 2005
- Long Panel
  - Alvarez and Arellano Econometrica 2003, Hahn and Kuersteiner Econometrica 2004, Kim and Sun Journal of Econometrics 2013
- Marginal treatment effect models
  - Heckman and Vytlacil, Econometrica 2005
- Robust estimation and inference
  - Gourieroux, Monfort and Trognon Econometrica 1984
- Non-parametric IV
  - Newey and Powell Ecta 2003, Blundell and Powell ReStud 2004, D’Haultfoeuille ET 2011
- Estimation of models of demand from aggregate data
  - Berry Levinsohn and Pakes 1992, Berry, Linton and Pakes 2004, Berry and Haile 2014, 1016