

# Microeconometrics

Spring 2018

Syllabus

Time: Tuesdays, 2pm to 4h45

Location: GA 106

Instructor: Valentin Verdier

email: vverdier@email.unc.edu

Office: GA 208B, meeting by appointment.

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 microeconomic 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 three parts: The first part will review the mechanics of essential topics from probability, estimation theory, and the econometrics of linear models. The second part will look at new topics such as models of panel data and the econometrics of non-linear models. The third part will look at selected advanced topics. The students and I will choose advanced topics together.

During most of the course, each lecture will include solved exercises presented by students for exercises provided by me at the end of the previous lecture.

## **Grade:**

The grade will come from the solved exercises presented during class, two in-class exams, and student presentations on advanced topics.

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

Chapters 1, 2, 3

**Topics:**

Week 1: Basic tools (chapters 2 and 3)

Week 2: Linear regression models (chapter 4) and Linear IV models (chapter 5&6)

Week 3: Linear panel data models 1 (chapter 7&10&11)

Week 4: Linear panel data models 2

Week 5: Buffer week on linear models.

Week 6: Midterm 1

Week 7: Non-linear models of cross-sectional data (chapters 12-15)

Week 8: Non-linear models of panel data 1

Week 9: Non-linear models of panel data 2 (including long panel asymptotics)

Week 10: TBD textbook or advanced topic on non-linear models.

Week 11: Midterm 2

Week 12: TBD advanced topic

Week 13: TBD advanced topic

Week 14: TBD advanced topic

Week 15: TBD advanced topic

## Possible Special Topics

- Local Average Treatment Effects and Extrapolation
  - Kline and Walters 2019, Mogstad et al. 2018,...
- Multi-Way Fixed Effects Models / Mobility Networks
  - Bonhomme et al. 2018, Jochman and Weidner 2018, Kline et al. 2018,...
- 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. This textbook is a great reference that I advise anyone to purchase. Conley Journal of Econometrics 1999, Jenish and Prucha JoE 2009 and 2012, Kuersteiner and Prucha JoE 2013, Kelejian and Prucha JoE 2007, Canay Romano and Shaikh Econometrica 2017
- 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, Torgovitsky working paper 2016
- 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

- Heterogenous effects with panel data

– Suri Econometrica 2011