Economics **Winter 2022**

Econometrics 220E Weeks 1–5

Instructor
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Disclaimer

- The information below reflects the official schedule of classes as of January 21, 2022. Please check the schedule for updates.
- Given the uncertainty due to the Covid-19 pandemic, some of the details on the syllabus may change. Please check Canvas and the syllabus regularly for updates.

1 Organization

The course will remain online until the end of week 5.

1.1 Class

Monday/Wednesday 3:30p–4:50p on Zoom

No class on Monday, January 17 (Martin Luther King, Jr. Holiday)

1.2 Office hours

By appointment (Zoom or in-person). Please email me.

2 Course outline

The first part of Econ 220E (weeks 1–5) covers microeconometric methods for causal inference. The material is divided into the following sections.

1. Potential outcomes, experiments, randomization inference
   - Chapter 2 in Angrist and Pischke (2009), Chapters 1, 2, 5 and 7 in Imbens and Rubin (2012)
   - Paper for referee report: Bugni et al. (2018)
2. Identification and estimation of treatment effects under unconfoundedness
   - Chapter 3 in Angrist and Pischke (2009), Chapters 12–16 and 18 in Imbens and Rubin (2012), Chapter 21 in Wooldridge (2010), Imbens (2004)

- Paper for referee report: Rothe (2017)

3. Instrumental variables with heterogeneous effects
   - Chapter 4 in Angrist and Pischke (2009), Chapters 23-24 in Imbens and Rubin (2012), Abadie (2003), Huber and Wüthrich (2018), Imbens and Angrist (1994)
   - Paper for referee report: Mogstad et al. (2021)
4. Difference-in-differences, synthetic controls, and related methods
   - Chapter 5.2 in Angrist and Pischke (2009), Abadie et al. (2010), Abadie et al. (2015), Abadie (2021), Athey and Imbens (2006), Chernozhukov et al. (2021), Lechner (2010), Melly and Santangelo (2015), Doudchenko and Imbens (2016), Roth and Sant'Anna (2020)
   - Paper for referee report: Callaway and Sant'Anna (2021)
5. Distributional effects, distribution and quantile regression
   - Chapter 7 in Angrist and Pischke (2009), Chapters 1-2 in Koenker (2005), Andrews (1994), Chernozhukov et al. (2013), Firpo (2007), Heckman et al. (1997), Koenker and Bassett (1978)
   - Paper for referee report: Abadie et al. (2002)

3 Grading policy

3.1 Referee report (20%)

For the referee report, you can choose one out of the five papers in Section 2. The referee report should contain the following elements:

1. Short description of the paper with a focus on its contribution.
2. Detailed and **formal** discussion of the main theoretical results/arguments and their proofs/derivations. If there are several key results, choose one or two main results.
3. Critical assessment including key strengths and weaknesses of the paper.

The referee report should contain about 4 pages of text (1.5 spacing, 12pt). The deadline for the referee report is **February 6, 11:59pm**.

3.2 Monte Carlo study (30%)

Choose a theoretical/methodological paper which (1) analyzes/develops a method related to the material discussed in this course, (2) was published at least at top-field level after 2012 (exceptions are possible, please check with me), and (3) is not on the syllabus or in the references on the slides. Please check with me to get my approval as soon as you have made your choice.

The assignment should contain the following elements:

1. Summary of the paper
2. Description of the theoretical properties of the method
3. Monte Carlo simulations investigating the theoretical properties. The simulations should be based on 2 different data generating processes and demonstrate a case where the method works and a case where it does not. When discussing the simulation results, you should provide a connection to the theoretical results and the underlying assumptions.
4. Code to replicate the simulation results (you may use any statistical software you want).

The assignment should contain about 6-8 pages of text (1.5 spacing, 12pt) and no more than 4 additional pages with tables and figures. You may work in groups of 3 students (all students will get the same grade). The deadline for the paper is **February 6, 11:59pm**.

4 Course material

The course material will be available online via Canvas.

5 References and textbook

- The papers and books indicated in the outline are the main references. I will sometimes refer you to additional references and discuss specific empirical papers.
- The course material is self-contained and no textbooks are required.
- All the papers should be available via scholar.google.com when using UCSD WLAN or VPN. Please let me know if you cannot find a paper and I will send you a copy.

6 Preexisting knowledge

This course heavily builds on Econometrics 220A–220D.

7 Basic needs

- Basic Needs: Any student who has difficulty accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their academic performance, is encouraged to contact: foodpantry@ucsd.edu, basicneeds@ucsd.edu, or call 858-246-2632.
- Triton Food Pantry is an emergency food relief program to provide food for students and fight food insecurity. You can get canned food, pasta, beans, and rice as well as fruit and vegetables at the pantry. foodpantry@ucsd.edu

- The Hub Basic Needs Center coordinates basic needs resources vital to thrive as a student, which includes access to nutritious food, stable housing, and financial wellness resources. We provide basic needs services and resource referrals to registered UC San Diego students. Ask us about CalFresh food benefits! basicneeds.ucsd.edu 858-246-2632.

References

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