ECON 8300: Topics in Advanced Econometrics, Fall 2022

University of Pennsylvania

Syllabus

(Tentative: August 16, 2022)

Instructor: Wayne Gao

- Email: waynegao@upenn.edu
- Office: PCPSE 630
- Office Hours: by appointment
- Zoom Meeting Room ID (in case of Zoom meeting): waynegao

Lectures:

- Time: Tue & Thu, 12:00-1:15pm
- Location: TBA

Course Description:

The course covers a selected range of topics in advanced econometrics, with a focus on *discrete choice* and *network* models.

The first part of the course will introduce you to nonparametric and semiparametric discrete choice models, covering topics such as binary choice, multinomial choice, panel/dynamic discrete choice and discrete choice with heterogeneous consideration sets.

The second part of the course will focus on models of social networks, covering topics such as peer effects, treatment effects with network spillover, diffusion in networks, homophily effect, dyadic network formation and strategic network formation.

Along the way as necessitated by the topics under discussion, the course will also cover advanced econometric methods for identification, estimation and inference under nonparametric/semiparametric, point-identified/set-identified and additive/non-additive settings.

The course will not only cover classical approaches and important papers on the selected topics, but will also discuss recent work, ongoing research, as well as open questions . Students will be thus expected to present selected working papers and/or original research proposals. The exact format of the presentations will be determined based on enrollment in the course.

Weekly Plan (Tentative):

- Week 1 (08/30): introduction
- Week 2 (09/06): binary and multinomial choice
- Week 3 (09/13): panel discrete choice
- Week 4 (09/20): consideration sets
- Week 5 (09/27): choice with many alternatives
- Week 6 (10/4): transition and fall break
- Week 7 (10/11): linear social interaction
- Week 8 (10/18): social interaction with network endogeneity
- Week 9 (10/25): treatment and diffusion in networks
- Week 10 (11/01): dyadic network formation
- Week 11 (11/08): dyadic/strategic network formation
- Week 12 (11/15): strategic network formation
- Week 13 (11/22): conclusion and Thanksgiving break
- Week 14 (11/29): final presentations
- Week 15 (12/06): final presentations

Expectations (Tentative):

1. Paper summaries (30%): You will be asked to read and summarize five or six assigned papers throughout the semester. Each summary should be at most one page long, and contain your summary of the key idea and/or results of a paper, along with a short description of what you like and do not like about the paper.

2. In-class paper presentation (30%): Each student should make at least one in-class presentation about an assigned paper, and the whole class will engage in a discussion of the presented paper in a "reading group" style. The length of each presentation will be finalized depending on the course enrollment.

3. Final presentation (30%): Each student can choose to present any topic related to the course upon my approval after a discussion with me. The length of each presentation should be 30 minutes, and there will be 10 additional minutes of Q&A/discussion.

4. Office hour (10%): Each student should attend my office hour or schedule an one-on-one meeting with me at lease once.

More details about the expected course work will be finalized based on the course enrollment and announced later on Canvas.