Econometric Theory II (Part 2)
Syllabus: Version 3 (March 26, 2021)

Instructor: Mikkel Plagborg-Moller, mikkelpm@princeton.edu

Lectures: Tue/Thu 10.40-12.10 on Zoom

Office hours: Thu 3.00-4.00 pm on Zoom

Website: https://princeton.instructure.com/courses/2172

Material. The course material is self-contained and there is no required textbook. Handouts covering most of the material will be available on the website. The handouts borrow heavily from material generously shared by Professor Alberto Abadie, although any errors are the sole responsibility of the instructor. Some students might find it useful to have a textbook as an additional reference. Good reference books include:

Cameron, A. C. and Trivedi, P. K. (2005), Microeconometrics: Methods and Applications, Cambridge University Press.


This syllabus also lists additional readings that provide a deeper understanding of the material.

Lectures. The class will meet online on Zoom twice a week. Recordings of the meetings will be made available on the course website afterwards.

Office hours. Please show up at the beginning of the weekly Zoom office hour if you want to participate. The instructor will log off when there are no further questions.
Homework. Problem sets will be posted on the course website every one or two weeks. The due date will typically be one week after the assignment is posted. Answers must be submitted electronically in the form of a single PDF document. Late assignments will not be accepted. You may form groups of at most 3 students and turn in one answer for the entire group. Moreover, you may discuss the exercises with any of your classmates. Problem sets will be graded coarsely; however, we reserve the right to subtract points for sloppy exposition, including unreadable code or poor document structure. If you find a grading error, please resubmit your problem set along with a one-paragraph explanation; the instructors reserve the right to re-grade the entire problem set.

Exams. There will be a two-hour final exam. No collaboration is allowed on the final.

Grading. Your final course grade will be an average of your grade in parts 1 and 2. The grade for part 2 will be a monotonic function of the weighted average of (i) the average problem set score (25% weight) and (ii) the final exam score (75% weight).

Code of conduct. All course activities, including class meetings and homework assignments, are subject to the university’s academic code and code of conduct as detailed in the “Rights, Rules, Responsibilities” publication.

Accommodations for students with disabilities. Students must register with the Office of Disability Services (ODS) (ods@princeton.edu; 258-8840) for disability verification and determination of eligibility for reasonable academic accommodations. Requests for academic accommodations for this course need to be made at the beginning of the semester, or as soon as possible for newly approved students, and again at least two weeks in advance of any needed accommodations in order to make arrangements to implement the accommodations. Please make an appointment to meet with the instructor in order to maintain confidentiality in addressing your needs. No accommodations will be given without authorization from ODS, or without advance notice.

Important dates. Changes will be announced via course email.

Mar 18 (Thu): First class with M. Plagborg-Moller

Apr 27 (Tue): Last class

May 6–7 (Thu–Fri): Final exam
Outline for Plagborg-Moller’s part of the course. The following outline is preliminary and may change without warning.

1. Bootstrap

2. Nonparametric methods
   (a) Nonparametric density estimation
   (b) Nonparametric regression
   (c) Semiparametric methods (time permitting)

3. More on extremum estimators
   (a) Review of generalized methods of moments, maximum likelihood
   (b) Minimum distance
   (c) Testing
   (d) Weak identification

4. Discrete choice
   (a) Binary choice
   (b) Multinomial choice

5. Quantile regression

6. Estimation of treatment effects
   (a) Counterfactuals, potential outcomes
   (b) Randomized experiments
   (c) Selection on observables, matching, inverse probability weighting
   (d) Instrumental variables, local average treatment effects
   (e) Differences-in-differences
   (f) Regression discontinuity
1 Bootstrap

* Cameron and Trivedi: Chapter 11.


2 Nonparametric methods

* Cameron and Trivedi: Chapter 9.


3 Extremum estimators

* Hayashi: Chapter 7.

Cameron and Trivedi: Chapters 5–6 and 10.

Wooldridge: Chapters 13–14.


4 Discrete choice

* Cameron and Trivedi: Chapters 14–15.

* Hayashi: Chapter 8.1.

Wooldridge: Chapters 15–16.


5 Quantile regression

* Cameron and Trivedi: Chapter 4.6.


### 6 Estimation of treatment effects

The following four readings are overviews of the material that we will cover in this section.


#### Randomized experiments


Selection on observables, matching, inverse probability weighting


Instrumental variables, local average treatment effects


Differences-in-differences


**Regression discontinuity**


