Econometric Theory II (Part 2)
Syllabus: Version 2 (March 31, 2022)

Instructor: Mikkel Plagborg-Moller, mikkelpm@princeton.edu
Lectures: Tue/Thu 10.40-12.10, JRR 198
Office hours: Thu 1.30-2.30 pm, JRR 282
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Website: https://princeton.instructure.com/courses/6049

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.

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 in paper form. 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; we reserve the right to re-grade the entire problem set.

**Exams.** There will be a 90-minute, in-person, open-book 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 assign-
ments, 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 Of-
fice of Disability Services (ODS) (ods@princeton.edu; 258-8840) for disability verification
and determination of eligibility for reasonable academic accommodations. Requests for aca-
demic 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 15 (Tue): First class with M. Plagborg-Moller

Apr 21 (Thu): Last class

May 6 (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. Extremum estimators
   (a) Nonlinear 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.

Hansen: Chapter 10.


2 Nonparametric methods

* Cameron and Trivedi: Chapter 9.


3 Extremum estimators
* Hayashi: Chapter 7.

Cameron and Trivedi: Chapters 5–6 and 10.

Hansen: Chapters 13 and 22.

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.


Hansen: Chapter 24.


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**


