University of Michigan — Department of Economics

Econ672: Econometric Analysis II

Winter 2020

Lecture: MW, 2:30-5:20pm in 1505 NUB

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Office hours: W, 11:00am-12:00pm in 351c Lorch

Discussion section: TTh, 5:30-7:00pm in 1518 NUB

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Office hours: M, 5:30pm-7:30pm in 142 Lorch,
Th, 2:00pm-4:00pm in 111 Lorch (Informal),
Th, 4:00pm-5:30pm in B116 MLB.

Course website: Canvas (`umich.instructure.com`)

Course objective: This is the second course of the first-year econometrics sequence in the Department of Economics. Econ672 provides a theory-based introduction to econometric analysis. The main focus of this class will be on the theoretical aspects of standard econometric models, but practical issues will be discussed when appropriate.

Prerequisites: Econ671. The course is not open to masters students. Non-econ PhD students should check with their department if their course grade in Econ671 makes them eligible for this course.

Textbook: This course does not follow a specific textbook. Suggested readings are listed below. An excellent reference is

Wooldridge, J. W. (2010). *Econometric Analysis of Cross-Section and Panel Data.* 2nd Edition. MIT Press.

Another excellent (but advanced) reference for some of the course material is

van der Vaart, A. W. (1998). *Asymptotic Statistics.* Cambridge University Press.

That book is far beyond the scope of Econ672 but will be used extensively in Econ678 and Econ679. A further reference for the first half of the course is Bruce Hansen's manuscript *Econometrics* available at `http://www.ssc.wisc.edu/~bhansen`.

Evaluations: Your grade will be based on problem sets (10% of the course grade), a mid-term exam (40%) and a comprehensive final exam (50%). The mid-term exam will be held Monday, March 30, 2:30pm-4:00pm in class. The final exam date and location are determined by the University.

Course outline: The following is a tentative outline of the course. I will add or remove topics depending on how the course progresses. Readings preceded by an "H" refer to the Hansen lecture notes; all other readings are chapters or sections in Wooldridge. I unfortunately may have to cancel lectures on short notice this semester.

Topic	Readings	Lecture	Date
Introduction / Econ671 review	3	1	03/09
Maximum likelihood estimation	13.1-5	2-3	03/09, 03/11
Least squares and projections	2, H3	4-6	03/11, 03/16, 03/16
Least squares in finite samples	4.3, H3	7	03/18
Least squares asymptotics	4.2	8	03/18
Instrumental variables	5	9-10	03/23, 03/23
Panel data	10	11-12	03/25, 03/25
Mid-term exam		1-12	03/30
Time dependence and HAC estimation	H16.1-7	13	04/01
M-estimation	12.1-6	14-16	04/01, 04/06, 04/06
Generalized method of moments	14.1-4	17	04/08
Discrete choice, censoring, truncation	15, 17.1-4	18-20	04/08, 04/13, 04/13
Selection models and missing data	19	21-22	04/15, 04/15
Potential outcomes, treatment effects	21	23-24	04/20, 04/20
Final exam		1-25	TBA