

Department of Economics
York University
Fall, 2017

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Course Outline
Econ 6220: Advanced Econometric Theory I

Course objective:

This is a special topics course with an emphasis on cross-sectional issues. We will first look at some core areas of econometrics, specifically: asymptotic theory, limited dependent variable analysis, count and duration models, longitudinal data, and nonparametric and semiparametric estimation. Following that, we will explore various methods for improving on (first-order) asymptotic theory such as stochastic and Edgeworth expansions, saddle-point approximations, the jackknife and bootstrapping. Time permitting we will conclude with some other topics such as estimation with weak instruments, quantile and Bayesian estimation, estimation of auction models and average treatment effects. The course will try to answer the needs of both applied researchers and more theoretical econometricians.

Textbooks:

Hansen, Bruce (2017) *Econometrics*, available at

<http://www.ssc.wisc.edu/~bhansen/econometrics/Econometrics.pdf>

Bierens, Herman J. (2005) *Introduction to the Mathematical and Statistical Foundations of Econometrics*, Cambridge, New York.

Wooldridge, Jeffrey M. (2010) *Econometric Analysis of Cross Section and Panel Data*, 2nd ed., MIT Press, Cambridge.

Recommended texts:

Amemiya, Takeshi (1985) *Advanced Econometrics*, Harvard University Press, Cambridge, Massachusetts

Angrist, Joshua D. and Jorn-Steffen Pischke (2009) *Mostly Harmless Econometrics*, Princeton, Princeton

Baltagi, Badi H. (1995) *Econometric Analysis of Panel Data*, John Wiley & Son Ltd, New York.

Baltagi, Badi H., ed. (2001) *A Companion to Theoretical Econometrics*, Blackwell Publishers, Malden, Massachusetts.

Cameron, A. Colin and Pravin K. Trivedi (2005) *Microeconometrics: Methods and Applications*, Cambridge

Cramer, J.S., *Econometric applications of Maximum Likelihood methods* (1986) Cambridge University Press, New York.

- Davidson, James, Stochastic Limit Theory (1994) Oxford, New York,
- Davidson, Russell and James G. MacKinnon (1993) Estimation and Inference in Econometrics, Oxford University Press, New York.
- Engel, R.F. and D. MacFadden, eds (1994) Handbook of Econometrics, Vol 4, North Holland, New York.
- Gallant, A. Ronald (1997) An Introduction to Econometric Theory, Princeton University Press, Princeton.
- Godfrey, L.G. (1988) Misspecification Testing in Econometrics: The Lagrange Multiplier Principle and Other Approaches, Cambridge University Press, New York.
- Greene, William H. (2007) Econometric Analysis, 5th ed, MacMillan, New York.
- Griliches, Zvi and Michael D. Intriligator (1983) Handbook of Econometrics, Vols 1–3, North Holland, New York.
- Hardle, W. (1990) Applied Nonparametric Regression, Cambridge University Press, New York.
- Heckman, James J. and Edward Leamer (2001) Handbook of Econometrics, Vol 5, North Holland, New York.
- Heckman, James J. and Edward Leamer (2005) Handbook of Econometrics, Vol 6A, North Holland, New York.
- Heckman, James J. and Edward Leamer (2007) Handbook of Econometrics, Vol 6B, North Holland, New York.
- Hsiao, Cheng (2014) Analysis of Panel Data, Third ed., Cambridge University Press, New York
- Maddala, G.S. (1983) Limited-Dependent and Qualitative Variables in Econometrics.
- Matyas, Laszlo, Editor (1999) Generalized Method of Moments Estimation, Cambridge University Press, New York.
- White, Halbert (2001) Asymptotic Theory for Econometricians, Revised Edition, Academic Press, New York.

Grading

The final mark will be based on a final exam (50%) and a paper (50%). Research topics for the paper must be chosen within the first two weeks of class and we will discuss these in the third class. The final papers will be presented and discussed in one of the last two or three classes. The quality of the presentations will contribute to the paper's grade. The papers may be either empirical or theoretical and may be geared towards research conducted for other courses or the thesis.

Office Hours: Tuesday and Thursday 9:45-11:15