OVERVIEW

This course is intended for advanced (2nd year) graduate students in economics. The aim is to cover a range of important topics in modern econometric theory. The focus is on the construction, analysis, and theory of linear and nonlinear models with stationary data (using nonbayesian, asymptotic methods. The course will not cover time series topics). Students are assumed to have already had training in calculus, probability, statistics, matrix algebra, and basic linear regression econometrics.

Much of the foundational material for this course is in:
   Greene, W. H. (1997), "Econometric Analysis," 3rd edition, Prentice Hall.
However, most of the material in the course will go well beyond the coverage in Greene. A lot of material for this course will also be taken from the following:
   Lee, M.J. (1996) "Methods of Moments and Semiparametric Econometrics for Limited Dependent Variables Models."
Other sources will include:
   Engle, R.F. and D. L. McFadden (1994) "Handbook of Econometrics, vol. IV," North-Holland
   Serfling, R.J., (1980) "Approximation Theorems of Mathematical Statistics," Wiley.
   Horowitz, J. (1998) "Semiparametric Methods in Econometrics," Springer.

GRADING

Midterm: 45%, Final: 45%, homework and class participation: 10%.

SYLLABUS

1. Properties of Estimators, Asymptotic Theory
2. Linear Models - OLS and GLS Estimation
3. Maximum Likelihood Estimation
4. Classical Hypothesis Tests - Wald, LM, and LR tests
5. Nonlinear Least Squares
6. Linear Instrumental Variables Models - 2SLS, Hausman Tests
7. The Generalized Method of Moments
8. The Bootstrap
9. Least Absolute Deviations and Quantile Estimators
10. Two Step Estimators, Generated Regressors
11. Latent Variable Models - Binary, Ordered, and Multinomial Choice, Censored and Truncated Regression, Sample Selection models
12. Nonparametric Density Estimation and Nonparametric Regression
13. Semiparametric Models and Estimators (Single Index Models, Partly Linear Models, and Average Derivatives)
14. Semiparametric Estimation of Binary Choice Models
15. Semiparametric Estimation of Censored Regression and Other Latent Variable Models
16. Tests Based on Semiparametric and Nonparametric Methods