1. GENERAL DESCRIPTION

This course presumes that students have completed Econometrics I or equivalent. This course is designed to acquaint graduate students with a variety of extensions of conventional linear models, such as panel data models, simultaneous equations models, and qualitative response models. The goal of this course is to acquaint students with basic econometric theories and techniques for the analysis of panel data models. My philosophy is that students require a solid background in theory in order to conduct quality applications. Students may expect that roughly 60% of class materials are about theories, and 40% are about applications.

2. TEXTBOOKS

(1) Required

Greene, Econometric Analysis, 5th edition (Prentice)

(2) Optional

Hamilton, Time Series Analysis (Princeton)
Wooldridge, Introductory Econometrics (South-Western).
Stock and Watson, Introduction to Econometrics (Addison Wesley)
Baltagi, ECONOMETRIC ANALYSIS OF PANEL DATA (Wiley), 2nd ed., 2001
Schmidt, Econometrics (Marcel Dekker)
Maddala, Limited-Dependent and Qualitative Variables in Econometrics (Cambridge Press)
Davidson and MacKinnon, Estimation and Inference in Econometrics (Oxford)

(3) Occasional

Amemiya, Advanced Econometrics (Harvard Press)
Theil, Principles of Econometrics (Wiley)

3. COURSE OUTLINE

The schedule listed below is just an estimate. Adjustments, if necessary, may happen during the term.
1. Basic Panel Data Models (2 sessions).
2. Instrumental Variables Estimation and Two Stage Least Squares (1 session).
3. Seemingly Unrelated Regressions (SUR) (1 session).
4. Simultaneous Equations Models (3 sessions).
5. Generalized Methods of Moments (GMM) (2 sessions).
6. Maximum Likelihood Estimation (MLE) (1 sessions).
7. Qualitative and Limited Dependent Variables Models (4 sessions).
8. Final exam (1 session).

4. REFERENCES

1. Basic Panel Data Models:

Greene, Ch. 13.1 – Ch. 13.4.
Stock and Watson, Ch. 8.
Wooldridge, Ch. 14
Baltagi, Ch.1 – Ch. 4.

2. Instrumental Variables Estimation and Two Stage Least Squares:

(2.1) Single Equation Models:

Greene, Ch. 5.
Stock and Watson, Ch. 10.
Wooldridge, Ch. 15.
(2.2) Panel Data Models:

Greene, Ch. 13.5.
Baltagi, Ch. 7.

3. Seemingly Unrelated Regressions (SUR):

Greene, 14.
Schmidt, 2.6.

4. Simultaneous Equations Models:

(4.1) Introduction:
Greene, Ch. 15.1 – Ch. 15.2.
Wooldridge, Ch. 16.
Schmidt, Ch. 4.1 – Ch. 4.3.
Davidson and MacKinnon, Ch. 7.1- Ch. 7.3.
(4.2) Identification:
Greene, Ch. 15.3.
Schmidt, Ch. 4.4.
Davidson and MacKinnon, Ch. 7.8.

(4.3) Single Equation Estimators:
Greene, Ch. 15.5.
Schmidt, Ch. 4.5 – Ch. 4.8.
Davidson and MacKinnon, Ch. 7.4 – Ch. 7.7.

(4.4) Systems Estimators (3SLS, FIML, etc.):
Greene, Ch. 15.6.
Schmidt, Ch. 5.1 – Ch. 5.3.

(4.5) Comparisons of Estimators:
Greene, Ch. 15.7.

(4.6) Recursive Models:
Theil, 9.6.

(4.7) Specification Tests:
Greene, Ch. 15.8.
Davidson and MacKinnon, Ch. 7.9.

(4.8) Dynamic Models:
Greene, Ch. 16.9.

5. Generalized Methods of Moments (GMM):

(5.1) General Principle:
Greene, Ch. 18.
Hamilton, Ch. 10, Ch. 14.
Den Haan, W. and A. Levin, 2001, Robust covariance matrix estimation with data-dependent VAR prewhitening order, mimeo, the University of California at San Diego.

(5.2) Applications to Panel Data Models:

Hahn, J., 1999, How informative is the initial condition in the dynamic model with fixed effects, Journal of Econometrics, 93, 309-326.

6. Maximum Likelihood Estimation (MLE):

Greene, Ch. 17.
Hamilton, Ch. 5.
Amemiya, Ch. 3.
7. Qualitative and Limited Dependent Variables Models:

(7.1) Cross-Sectional Analysis:

Greene, Ch. 21 – Ch. 22.
Davidson and MacKinnon, Ch. 15.

(7.2) Panel Data Analysis:

Greene, Ch. 21 – Ch. 22.
Baltagi, Ch. 10.4 - 10.5.

5. GRADE

(1) Weekly Assignments: 10%.
(2) Weekly Quizzes: 40%
(3) Final Exam: 50%.