

Economics 8828  
Dr. Waldman  
Room 108, Economics

August 29, 2006  
waldman@colorado.edu  
492-6781; TR 3:30 - 5:00 pm

### Course Information

**General:** Economics 8828 is a one-semester course in *Microeconometrics*, "...the analysis of individual-level data on the economic behavior of individuals or firms using regression methods applied to cross-section and panel data." Course material will emphasize the theory, methods of estimation, and the practical application of the methods of estimation. Topics include but may not be limited to: discrete and limited dependent variables; sample selection models; panel data; and errors in variables. Throughout, students are expected to be able to write computer programs in GAUSS (especially using the Maxlik module), to implement the estimators and hypothesis tests studied in this course.

**Text:** Microeconometrics, A. C. Cameron and P. K. Trivedi, Cambridge, 2005.

**Prerequisites:** Economics 7818 and 7828, and the material in Chapter 4 and Appendix A of the text.

**Requirements:** There will be two lectures weekly, meeting Tuesday and Thursday from 2:00 to 3:15 pm. There will be a midterm exam, Thursday, October 19, a final exam, and periodic problem sets throughout the semester.

#### Tentative Course Outline:

I Overview of Microeconometrics and the Linear Model, with Instrumental Variables

Text: Chapters 1 - 4.

*Problem Set (PS) #1: Introduction to Data Analysis with Gauss*

II  $m$ -Estimation and Computational methods

Text: Chapters 5, 10.

*PS #2: Maximum Likelihood Estimation*

III Discrete and Limited Endogenous Variables - Part A

The probit and logit models; Multiple outcomes

Text: Chapters 14 and 15

*PS #3: Discrete and Limited Dependent Variables and the Value of Information*

*Optional Reading:* "A Graphical Interpretation of Probit Coefficients." W.

Becker and D. Waldman, *Journal of Economic Education*, 1990.

IV Panel Data - Part A

Text: Chapter 21

Structure and Notation; Fixed and random effects

*PS #4: Basic Panel Data Models*

V Discrete and Limited Endogenous Variables - Part B

Simultaneous equations models with discrete and limited endogenous variables

Text: Chapters 15 and 16

*PS #5: Program Participation and Energy Conservation*

*Optional Reading:* "Voluntary and Incentive-Induced Conservation in Energy Management Programs." D. Waldman and M. Ozog, *Southern Economic Journal*, 62(4), April 1996, pp. 1054-71.

VI Errors in Variables

The classical errors in variables model; Using group means as variables

Text: Chapter 26

*PS #6: Using Engineering Estimates in Conservation Models*

*Optional Reading:* "Measurement Error in Recreation Demand Models: The Joint Estimation of Participation, Site Choice, and Site Characteristics." E. Morey and D. Waldman, *Journal of Environmental and Economic Management*, May, 1998.

VII Panel Data - Part B

Instrumental Variable and GMM Estimation

Text: Chapter 22

*PS #7: The Hausman-Taylor Estimator*

*Optional Reading:* "The Influence of Social Programs in Source Countries on Various Classes of US Immigration." M. Greenwood, J. McDowell, D. Waldman, and S. Zahniser, *Journal of the American Statistical Association*, v. 94, Number 445, March 1999, pp. 64-74.

VIII Introduction to Count Data

Poisson, Gamma, and Negative Binomial Models

Text: Chapter 20

*PS #8: Question Response Time in Conjoint Estimation of Random Utility Models*

**Readings and texts:**

Readings from journals/manuscripts will be assigned during the semester. Texts (not required) I have found useful:

- Takeshi Amemiya, *Introduction to Statistics and Econometrics*, Harvard University Press, 1994.
- William Greene, *Econometric Analysis*, Prentice Hall, 2000.
- Arthur Goldberger, *A Course in Econometrics*, Harvard University Press, 1991.
- G. S. Maddala, *Limited-dependent and Qualitative Variables in Econometrics*, Cambridge University Press, 1983.
- Train, Kenneth, *Discrete Choice Methods with Simulation*, Cambridge University Press. Available free online at <http://elsa.berkeley.edu/books/choice2.html>.
- Badi H. Baltagi, *Econometrics of Panel Data*, Wiley, 1995.