

**Economics 203C**  
**Introduction to Econometrics: System Models**

**Instructor:**

**Moshe Buchinsky**  
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Office hours: Mon, Wed 11:00–12:00pm  
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**Teaching Assistant:**

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**Section:**

Friday, 2:00–3:50PM, Public Policy, Room 1222.

**Textbooks:**

The main textbook for the course:

William H. Greene, *Econometric Analysis*, Prentice Hall; 5th edition (August 22, 2002), ISBN: 0130661899.

Other useful books:

Paul, Ruud, *An Introduction to Classical Econometric Theory*, Oxford University Press, 2000.

Russell Davidson and James G. MacKinnon, *Estimation and Inference in Econometrics*, Oxford University Press, 1993.

Fumio Hayashi, *Econometrics*, Princeton University Press, 2000.

G. S. Maddala, *Limited-Dependent and Qualitative Variables in Econometrics*, Princeton University Press, 1986.

**Problem sets:** There will be approximately 8 problem sets. The problem sets will include some theoretical derivations, as well as empirical exercises. All empirical exercise will require the use of the matrix language MATLAB. The problem sets will be discussed in the sections. All problem sets must be turned in on time; no late submissions of problem sets will be considered.

**Exams:** There will be one exam during this course, namely the final exam. The final exam will be on Thursday, June 12, 2003. Both exams will be open-book exams.

**Grades:** The grade will be determined by the problem sets (50%) and the final exam (50%).

## Course Outline

1. Instrumental Variables (Chapter 14)
  - (a) Correlated regressors and instrumental variables
  - (b) Instrumental variables in practice
  - (c) Simultaneous-equation model
  - (d) Estimation of regression with endogenous regressors
  - (e) System Estimation and three-stage least squares
  - (f) Specification tests
  - (g) Dynamic Models
2. Maximum Likelihood (Chapter 17)
  - (a) Identification
  - (b) Large sample properties
  - (c) Testing procedures
  - (d) Applications
3. Limited Dependent Variable Models (Chapter 22, pp.756–790)
  - (a) Truncated data
  - (b) Censored data
  - (c) Sample Selection
4. Discrete Choice Models (Chapter 21, 663–735)
  - (a) Binary choice models
  - (b) Multinomial choice models
  - (c) Identification and estimation of discrete choice models