

Xiaodong Liu, Assistant Professor

Office: Economics 10  
Voice: 303-492-7414  
Email: xiaodong.liu@colorado.edu

Location: Economics 5  
Meeting Times: TR 2:00 – 3:15 pm  
Office Hours: W 12:30 – 3:30 pm

**Course Description:**

Econ 8838 is an advanced level econometrics course that focuses on the analysis of individual-level data. It covers econometric methods based on the general linear and nonlinear models for cross-section data and panel data. Numerical and simulation-based computational techniques in estimation will also be addressed. If time permits, spatial and social interaction models will be introduced.

**Text:**

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

**Other Useful Books:**

T. Amemiya, *Advanced Econometrics*, Harvard University Press, 1985.

R. Davidson and J. G. MacKinnon, *Econometric Theory and Methods*, Oxford University Press, 2004.

William H. Greene, *Econometric Analysis*, 5th edition, Prentice Hall, 2003.

**Prerequisites:**

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

**Assessment:**

There will be a midterm exam, a final exam, and periodic problem sets. Some assignments will involve the use of computer packages to estimate econometric models.

1. Homework assignments (15%)
2. Midterm examination (40%)
3. Final Examination (45%)

**Tentative Course Outline:**

1. Review of Linear Models (Text: Chapter 4).  
OLS and WLS estimation.
2. m-Estimation (Text: Chapter 5).  
ML and NLS estimation.
3. Generalized Method of Moments (Text: Chapter 6).  
2SLS and GMM estimation.
4. Discrete and Limited Endogenous Variables - Part A (Text: Chapters 14 and 15).  
Probit and logit models; multinomial models.
5. Discrete and Limited Endogenous Variables - Part B (Text: Chapter 16).  
Models for censored and selected samples.
6. Linear Panel Data Models (Text: Chapters 21 and 22).  
Fixed and random effects models.
7. Simulation-Based Methods (Text: Chapter 12).  
Maximum simulated likelihood estimation; Moment-based simulation estimation.

**University Policies:**

University policies regarding classroom behavior are available at <http://www.colorado.edu/policies/classbehavior.html> and at [http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student\\_code](http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code)

Information regarding the University Honor Code is available at <http://www.colorado.edu/policies/honor.html> and at <http://www.colorado.edu/academics/honorcode>. The Honor Code Council can be contacted by email at [honor@colorado.edu](mailto:honor@colorado.edu) or by telephone at 303-725-2273.

University policies regarding disabilities are available at <http://www.colorado.edu/disabilityservices>. Disability Services can be contacted by telephone at 303-492-8671, or in person at Willard 322.

University policies regarding religious practice are available at [http://www.colorado.edu/policies/fac\\_relig.html](http://www.colorado.edu/policies/fac_relig.html).

University policies regarding Sexual Harassment and Amorous Relationships are available at <http://www.colorado.edu/odh/>. The Office of Discrimination and Harassment can be reached by telephone at 303-492-2127. The Office of Judicial Affairs can be reached at 303-492-5550.