



- Course:** Microeconometrics
- Faculty:** Hanna Wang (hannaw.econ@gmail.com)
- Term:** 1st Semester
- Class Time:** Tuesdays and Thursdays 9.00-11.00am
- Office Hours:** Upon request, Office 172
- TA:** Manuel Montesinos (manuelvicentemontesinos@gmail.com)
- TA sessions:** Fridays 11.30 am-12.30 pm

Description:

This course introduces the students to frontier econometric methods for the analysis of cross-sectional and panel micro-data. The course explores different techniques that are used in the analysis of discrete, continuous, and limited dependent outcomes, as well as policy evaluation tools.

Objective:

The main goal of this course is to provide students with a frontier econometric toolbox that allows them to produce high level empirical analyses. This course is suitable for any second year student, including those with empirical interests, but also for macro- and micro-oriented students who aim at providing empirical foundations to their research. The course devotes a special emphasis in the implementation of the different techniques, with an array of problem sets in which students are expected to use each of the techniques presented in class in the analysis of real data.

Outline:

1. Introduction and a brief review of relevant tools
 - a. Overview
 - b. Maximum likelihood
 - c. Generalized Method of Moments (GMM)
 - d. Numerical methods
2. Panel data
 - a. Introduction
 - b. Static models
 - c. Dynamic models
3. Discrete choice
 - a. Binary outcome models
 - b. Multinomial models
 - c. Endogenous variables
 - d. Binary models for panel data
4. Censoring, truncation, and selection
 - a. Introduction
 - b. Censoring and truncation. The Tobit model
 - c. Selection
5. Duration models
 - a. Introduction
 - b. The hazard function
 - c. Conditional hazard functions: the proportional hazard model
 - d. Likelihood functions
 - e. Unobserved heterogeneity
 - f. Multiple exit discrete duration models
6. Policy Evaluation Methods: Treatment Effects
 - a. Potential Outcomes and Causality
 - b. Social Experiment
 - c. Matching
 - d. Instrumental Variables
 - e. Regression Discontinuity
 - f. Difference in Differences

Grading:

50% Final exam. 25% Problem sets. 25% Paper presentation. Problem sets are due Fridays. Final exam will be held on **December 8**. See tentative schedule below.

TA sessions:

Manuel will go through practice problems and discuss problem set solutions in the TA sessions. If you would like to review certain topics or have additional questions, please email him ahead of time.

Schedule (tentative):

Week	Topics	Assignments	Notes
Sep 15, 17	1		No TA session
Sep 22	2	Paper 1	TA session
Sep 29, Oct 1		PS1 due; papers 2	TA session
Oct 6, 8	3	Paper 3	TA session
Oct 13, 15	4	PS2 due; papers 4,5	TA session
Oct 20, 22	5	Paper 6	TA session
Oct 27, 29	6	PS3 due; paper 7, 8	TA session
Nov 3,5		Paper 9, 10	TA session
Nov 10, 14	No classes	PS 4 due	TA session
Nov 20	No classes	PS 5 due	TA session
Nov 27	No classes	PS 6 due	TA session
Dec 8	No classes	Final Exam: 10 am	

References:

(These are core references. References for applications to be given during the course)

General references

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Cameron, A. C. and P. K. Triverdi (2005), *Microeconometrics: Methods and Applications*, Cambridge University Press

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Numerical Methods

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Panel data

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Arellano, M. and S. Bonhomme (2011), "Nonlinear Panel Data Analysis", *Annual Review of Economics*, Vol. 3: 395-424

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Duration

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Policy Evaluation Methods: Treatment Effects

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