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Office Hours: Tuesdays, 7:30-8:30 p.m.; Thursdays, 4:30-5:30 p.m.

This course is designed to provide students with a thorough grounding in the theory and applications of regression analysis. This course builds on your knowledge of statistics, but unlike statistics, econometrics is concerned with relationships between variables rather than analysis of just one variable. The goal of the course is to develop expertise in both evaluating the work of others and performing analysis of your own. We will first develop estimators under ideal conditions. Then we will investigate the properties of these estimators when ideal conditions do not hold, and see whether modifying the estimation technique can restore the desirable properties of these estimators.

**Text:** The required text is Econometric Models and Economic Forecasts, 4<sup>th</sup> Edition, by Robert S. Pindyck and Daniel L. Rubinfeld (McGraw Hill, 1998).

**Software:** Computer software will be needed for some of the problem sets and for the project. We will be using *STATA*, a statistical package that is versatile, powerful and very popular. *STATA* is available for both Windows and the Mac. More information about *STATA* and software options will be made available in a separate handout.

**Prerequisites:** Calculus and statistics (Econ 151, Econ 157 or equivalent).

**Grading:** The course grade is based on the following:

Midterm (in class, Thursday, October 26)	25 percent
Final Exam (Wednesday, December 13, 9:00 - 11:00 a.m.)	40 percent
Research Paper (due December 7, beginning of class)	25 percent
Problem Sets (four in all, due at the beginning of class)	10 percent

No make-up or early exams will be given. Students should check their schedules to make sure that no conflicts occur on these exam dates.

**Reading:** A tentative reading schedule is outlined on pages 2 and 3. Required reading averages fewer than 10 pages per class, but most often you will have to work through the material slowly and repeatedly. Sticking to the reading schedule keeps you concurrent or ahead of the pace of the lectures.

**Class Meetings:** The lecture will begin precisely at the beginning of the scheduled class time. All students are required to arrive at least 3 minutes early for all classes, so that we can start (and end) on time.

<u>Date</u>	<u>Reading</u>	<u>Main Topic</u>	<u>Things Due</u>
September 5	---	Introduction	---
7	Ch. 1	Least Squares Regression	---
12	Ch. 2, pp. 19-32	Basic Statistics	Paper--submit names for group
14	Ch. 2, pp. 33-53	Basic Statistics	---
19	Ch. 3, sections 3.1, 3.2	Simple Model, Gauss-Markov Thm.	---
21	Ch. 3, sections 3.3, 3.4	Hypothesis Testing, R-Squared	Problem Set #1
26	Ch. 3, Appendix	Properties of the Simple Model	Paper--submit topic (one page)
28	Ch. 4, section 4.1	Multiple Regression	---
October 3	Ch. 4, sections 4.2, 4.3	Hypothesis Testing, Corrected R-Squared	---
5	Ch. 4, sections 4.4, 4.5, 4.6, Appendix 4.1, 4.2	Multicollinearity Partial Correlation	Problem Set #2
10	Ch. 5, sections 5.1, 5.2	Non-Linear Functional Forms Dummy Variables	Paper--submit 1st progress report (2-3 pages)
12	Ch. 7, section 7.3	Omitted Variable Bias	---
17	Ch. 5, sections 5.3.1-5.3.3	Joint Hypothesis Tests	Problem Set #3
19	Ch. 5, sections 5.4, 5.5, Appendix 5.1	Splines, Structural Breaks, Hypothesis Tests with Dummy Variables	---
24	---	Review	---
26*	---	MIDTERM EXAM	---

<u>Date</u>		<u>Reading</u>	<u>Main Topic</u>	<u>Things Due</u>
October	31	Ch. 6, section 6.1	Heteroskedasticity	---
November	2	Ch. 6, Section 6.1.2	Tests for Heteroskedascity	Paper--submit 2nd progress report (4-5 pages)
	7	Ch 6, section 6.2	Serial Correlation	
	9	Ch. 7, sections 7.1, 7.2	Correlation Between $X_i$ and $\epsilon_i$ , Errors in Variables	---
	14	Ch. 12, sections 12.1	Simultaneous Eqn. Models, Identification	---
	16	Ch. 12, sections 12. 2	Simultaneous Equations, continued	---
	21	Ch. 12, section 12.3	Two-Stage Least Squares	Problem Set #4
	28	Ch. 12, section 12.4	Two-Stage Least Squares, continued	---
	30	Ch. 11, section 11.1	Binary-Choice Models	---
December	5	---	Binary-Choice Models, continued	---
	7*	---	Review	PAPER DUE AT START OF CLASS
	13*	---	FINAL EXAM, 9:00--11:00 a.m.	---