ECON 742: Empirical Microeconomics

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Office Hours: Thursday 10:30-11:30 by appointment

Lecture Time: Thursday, 11:35-2:25

Location: LEA 541

Description:

ECON 742 is a course on methods that are commonly used in various fields of Economics such as Labor, Development, Growth, Health, Industrial Organization, etc. In other words, the course is about Applied Microeconometrics. The methods to be discussed in this class can in general be applied to cases where you have observations for a single period or multiple periods on a large number of units (individuals, firms, countries, etc.). We will focus mainly on the methods, i.e., what is the method, why it works, how it works. The discussions will be superficial (i.e., no proofs) in some sense because the primary purpose of this course is to get you familiar with a variety of methods. We will use some relatively well known datasets for applications of these methods.

What we will not discuss are the following: (1) the theoretical foundation for all these methods, because it is not relevant for the target students; (2) novel applications, because you can learn it better from other field-specific courses.

Prerequisite:

ECON 662D1 or permission of instructor. Familiarity with Stata will be very helpful.

Grading Policy:

The best way to learn methods is to apply them. So this course will be **assignment** intensive. Assignments are posted below. They are due exactly one week after the concerned topic is covered in the lecture. Feel free to work as a group for these assignments but turn in your own answers.
40% of the final grade will be based on the assignments.

At the same time, I would expect all the students to write a paper on any topic of their choice. In this paper you would apply the methods learnt in this class to real life data. I would expect you to come up with a research question of your choice, think of an appropriate dataset, and then apply these methods. You can expect my help with the last part. You will present the progress of your project two times during

the semester, and will hand in the final paper one week after the last day of lectures. The project will account for (10 + 10) + 40 = **60% of the final grade**.

Textbook:

"Microeconometrics" by Colin Cameron and Pravin Trivedi **(CT)**. I strongly recommend that you solve all the exercises in this book. Your homework assignments are based on these exercise. Online resources for the book are available from the website http://cameron.econ.ucdavis.edu/mmabook/mma.html.

"Microeconometrics Using STATA" by Colin Cameron and Pravin Trivedi is a useful supplement for this book.

"Econometric Analysis of Cross Section and Panel Data" by Jeffrey Wooldridge **(W)** is also an excellent reference. I will assign certain homework problems from this book as well. In particular, the panel data version for each nonlinear model is covered quite extensively in W.

In addition, you will find the lecture notes by Guido Imbens and Jeffrey Wooldridge from their popular lecture series "What is New in Econometrics" very useful.

Course Outline:

Date	**Chapter: Topic**	**Assignments from the Text**
1: Jan 9	Review of Maximum Likelihood Estimation	
2: Jan 16	**CT Ch 14:** Binary Outcome Models **W Ch 15:** Binary Response Models (15.1-15.7)	CT: 14-3, 14-4, 14-5, 14-6 W: 15.5, 15.14 (Due: Jan 23)
3: Jan 23	**CT Ch 15:** Multinomial Models **W Ch 16:** Multinomial and Ordered Response Models	CT: 15-2, 15-3, 15-4 W: 16.3 (Due: Jan 30)
4: Jan 30	**CT Ch 16:** Tobit & Selection Models **W Ch 17:** Corner Solution Responses (17.1-17.7) **W Ch 19:** Censored Data, Sample Selection, and Attrition (19.1 – 19.8)	CT: 16-2, 16-3, 16-5 W: 17.6, 17.9, 19.14, 19.16 (Due: Feb 6)

5: Feb 6	**CT Ch 20:** Models of Count Data **W Ch 18:** Count, Fractional and Other Nonnegative Responses (18.1-18.6) Discuss any important part left from the topics covered until now especially selection models.	CT: 20-4, 20-6 W: 18.8 (Due: Feb 13)
6: Feb 13	**CT Ch 21:** Linear Panel Models: Basics **W Ch 10:** Basic Linear Unobserved Effects Panel Data Models **CT Ch 22:** Linear Panel Models: Extensions **W Ch 11:** More Topics in Linear Unobserved Effects Models	CT: 21-3, 21-4 W: 10.13, 10.14 CT: 22-2, 22-5 W: 11.3, 11.9 (Due: Feb 27)
7: Feb 20	**Student presentation I**	
8: Feb 27	Parts not fully covered from Feb 13 **CT Ch 23:** Nonlinear Panel Models **W Ch:** 15.8, 17.8, 18.7, 19.9 Discuss any important part left from the topics covered until now	CT: 23-2, 23-3 W: 15.18, 17.13, 17.14, 17.17, 18.12, 19.17 (Due: Feb 27)
9: Mar 12	**Ch 25:** Treatment Evaluation We will start with a brief introduction to nonparametric estimation and identification. Please consult **Ch 9 (CT)** for this purpose. For those with more interest in the theory, please consult **Ch 2-3** of **Pagan and Ullah**. **W: Ch 21** Estimating Average Treatment Effects	
10: Mar 19	**Ch 25:** Treatment Evaluation	Try to turn in all the HWs by this day.

	W: Ch 21 Estimating Average Treatment Effects Other readings to be assigned	
11: Mar 26	Machine learning methods in program evaluation Readings to be assigned	
12: Apr 2	**Student Presentation II**	
13: Apr 9	**Student Presentation II**	

Apr 16: Deadline for submitting your project report.