

Northeastern University
Department of Economics
Applied Econometrics II
(ECNG 740)
Fall 2006
T, Fr 3:00 – 4:30
Classroom: Snell Library 47

Contact Information

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Office Hours

314 Lake Hall
Thursdays, 3:00 – 4:30
Fridays, 4:30 – 5:30

Overview

This course is intended to extend students' understanding of econometrics beyond the topics covered in ECNG140 (Applied Econometrics). The focus will be on methods for analyzing panel data with emphasis on those techniques prevailing in the Labor and Industrial Organization literature. Topics include: models with multiple equations, non-linear regression models, asymptotic theory, maximum likelihood, discrete choice models, limited dependent variables, duration models, and panel data methods. Students will develop and complete an econometric research paper in the area of Labor or Industrial Organization using one or more of the methods covered.

Prerequisites

The prerequisite for this course is ECNG140 (Applied Econometrics) or its equivalent. A working knowledge of the topics covered in ECNG140 and ECNG105 (Mathematics and Statistics for Economists) will be assumed.

Blackboard

Course documents (the syllabus (including any changes), handouts, and announcements) can be found by accessing Blackboard. All changes to the syllabus and all announcements will be posted there. In addition, grades for all assignments will be posted on Blackboard.

To use Blackboard, log in to your myNEU account (<http://myneu.neu.edu>). Once you have officially registered for the course, it should automatically appear in your Course List. Click on ECNG740 Applied Econometrics II (Fall 2006). You should now be in the course content area. A Blackboard tutorial can be found at www.discoveringblackboard.neu.edu.

To submit assignments via Blackboard, find the appropriate item in the Assignments folder and click on "View/Complete". You will then be able to attach the file with your

work.

Course Outline and Readings

Required Text

The required text for this course is:

- (CT) Cameron, A. Colin and Pravin K. Trivedi. *Microeconometrics*. New York, NY: Cambridge University Press, 2005.

The book provides more detail than will be covered in class. Lectures will mainly follow this text, but will also be drawn from a number of other sources.

Recommended Texts

The following texts are not required, but may provide additional insight and are meant to reinforce your understanding of the topic being discussed.

- (Gr) Greene, William H. *Econometric Analysis*. 5th ed. Upper Saddle River, NJ: Prentice Hall, 2003.
- (W) Wooldridge, Jeffrey M. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press, 2002.
- (Hs) Hsiao, Cheng (a.k.a. Xiao, Zheng). *Analysis of Panel Data*. New York, NY: Cambridge University Press, 1986.
- (Md) Maddala, G. S. *Limited Dependent and Qualitative Variables in Econometrics*. New York, NY: Cambridge University Press, 1983.
- (Mn) Manski, Charles F. *Identification Problems in the Social Sciences*. Cambridge, MA: Harvard University Press, 1995.

Greene and Wooldridge provide more technical detail than the main text, but are more difficult to read. The other texts listed provide details on specific areas covered in this course.

All texts are on reserve in Snell library. All assigned articles will be available on Blackboard.

Course Outline

The main topics covered in the course will be:

1. Introduction

Read:

- Heckman, James J. (2000). Causal Parameters and Policy Analysis in Economics: A Twentieth Century Retrospective. *Quarterly Journal of Economics*, vol. 115(1), pp. 45-97.
- CT: 1.1-1.2, 1.6; 2 (skim); 3

See also:

- Gr: 1
- W: 1
- MN: 1-4

2. Matrix Algebra and Asymptotic Theory (2 lectures)

- CT: Appx A

See also:

- Gr: Appx D
- W: 3.1-3.4

3. Review of Linear Models (2 lectures)

- CT: Chapter 4.3-4.5, 4.7-4.8

See also:

- G: 3.2; 5
- W: 4

4. Maximum Likelihood (2 lectures)

- CT: 5

See also:

- Gr: 9.2; 17; 21.1-21.4
- W: 12.4; 13.1-13.7

5. Binary and Multinomial Models (2 to 4 lectures)

- CT: 14.1-14.4, 14.9; 15.1-15.5, 15.9, 15.13

See also:

- Gr: 21.1-21.8
- W: 15.1-15.6, 15.9-15.10
- Md: 1-3

6. Censored and Truncated Models (2 to 4 lectures)

- CT: 16.1-16.6, 16.11

See also:

- Gr: 22.1-22.4
- W: 16; 17
- Md: 6.1-6.7; 8; 9.7-9.8

7. Bootstrapping

CT: 11

See also:

Gr: E4

W: 12.8.2

8. Basic Linear Panel Models (3 to 5 lectures)

- CT: 21

See also:

- Gr: 13
- W: 10
- Hs: 1-3

9. Specification Testing (1 to 2 lectures)

- CT: 8

See also:

- Gr: 5.5
- W: 4.4; 10.7

10. Other Topics (if time permits)

Depending on time and interest, other topics may include:

- Treatment Evaluation
- Survival Analysis
- Measurement Error

Any changes to the course outline will be posted on Blackboard.

Course Requirements

Computer Exercises (20%)

Homework will be assigned on a regular basis throughout the semester; it will be announced in class and will be available on Blackboard. It may either be submitted in class on the day it is due or via Blackboard, unless otherwise specified.¹ While students are encouraged to work together (especially in learning how to use a statistical package), each student is responsible for turning in his or her own assignment. Papers submitted with identical answers will be marked down.²

¹ Please note that while submitting homework using Blackboard, you are still responsible for clearly indicating your answers on your output. Also, please take care to ensure that what you submit is printer friendly (e.g., Excel spreadsheets should be formatted so tables are not split across pages). Points will be taken off if the homework is difficult to read or the answers are not clearly indicated whether submitted in class or via Blackboard.

² If two or more students turn in an assignment with identical answers to any problem, the grade for that problem will be determined by taking the actual grade and dividing it by the number of students who turned in the identical solution. Answers will be considered "identical" if the text is the same or if the answers have been paraphrased.

Empirical Research Paper (20%)

The empirical research paper may be an original idea or an extension of previous work using one of the tools developed in this course. The paper should follow the styles found in Economics journals and contain both a methodology and an empirical section with estimates from a microdata set. For more details, see the Guidelines for an Empirical Research Paper handout.

The paper is due at 10 pm on Thursday, 7 December and should be submitted via Blackboard. Supporting documentation (tables, programs, etc.) may be turned in at class time the next day.

Exams (60%)

There will be one midterm and a final exam. The midterm will count for 20% of your grade; the final exam will be worth 40%.

The exams are tentatively scheduled as follows:

Midterm: Friday, 20 October

Final Exam: Tuesday, 12 December

Any changes to this schedule will be announced in class and posted on Blackboard.

Grading Policies**Make-up Exams**

There will be no make-up exams without a legitimate, documented excuse. If you need to make up an exam, you must contact me as soon as possible (preferably before the exam) to make alternative arrangements.

Late Assignments

Assignments will be marked down one grade step (e.g., an A will become an A-) for each day the assignment is late.

Cheating and Plagiarizing

Anyone caught cheating on an exam will receive an F in the course and be referred to the Graduate Academic Standing Committee (GASC) for appropriate disciplinary action. Plagiarism is a form of cheating. If a paper is plagiarized in full or in part, the student will receive an F in the course and be referred to the GASC.³

Papers submitted for this course must be submitted through Blackboard and may be subject to an electronic anti-plagiarism review. As part of this process, your paper may be placed in a permanent electronic database whose only purpose will be to act as a reference point for the anti-plagiarism software.

³ For a general overview of what constitutes academic dishonesty and plagiarism, see pages 20 through 22 of the Graduate Resource Guide, which is available in 301 Lake Hall. The Northeastern Library web site also has a description of plagiarism, including examples (<http://www.lib.neu.edu/tutorials/plagiarism.html>).