ECONOMICS 575
APPLIED ADVANCE ECONOMETRICS
COURSE OUTLINE

Department of Economics – Portland State University
Fall 2014
Version as of September 22, 2014

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Class Meeting: T-TH 4:40 – 6:30pm
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Office hours: T-TH 1:30-2:30 or by Appointment

Course description

This course focuses on empirical methods and application of linear and non-linear regression models. Students will cover advance topics related to methodological issues in econometrics. The goal of this course is to expose students to econometric techniques frequently used in applied economic research and to provide students with the tools necessary to analyze and interpret data using primarily non-linear regression analysis. Econometric theory will be introduced to provide students with background knowledge of econometric models but the course will primarily focus on the applied econometric methods. At the end of the course, each students will have enough knowledge about each applied econometric approach to know when, and when not, to use it in independent research.

Prerequisites

The pre-requisite for this course are ECON 570 and 571. This course assumes background knowledge of linear econometric models. In addition to economic theory, knowledge of mathematics, statistics, and basic econometrics is required. Some experience with the use of statistical software will be useful but is not necessary.

Textbooks

The textbooks for this course are available at Portland State University Bookstore.

Required
Wooldridge, Jeffrey. 2010. *Econometric Analysis of Cross Section and Panel Data,2nd Edition*. Cambridge, MA: MIT Press.

Recommended
Cameron, Colin and Pravin Trivedi. 2005. *Microeconometrics: Methods and Applications*. Cambridge University Press.

Angrist, Joshua and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics*. Princeton: Princeton University Press.

The primary text for the course is Econometric Analysis of Cross Section and Panel Data, second edition. Be advised that many section of this book are quite advanced and so you will not be expected to read all of the text. However, there are some sections of the text that will provide an excellent complement to the lecture material.

Grades

Grades for the course are based on performance on the problem sets, midterm exam, and a research paper. The distribution of points in the grading scheme is as shown below:

	points possible	
Midterm Exam	100	
4 Homework Assignments	80	(20 points each)
Research Paper	120	
Total	300	

Exams

The Midterm exam will be on November 6th from 4:40 PM to 6:30 PM. There is no make-up exam for the midterm. If you miss the midterm with a valid University-excused absence you may transfer the weight of the midterm to the research paper.

Problem sets

The problem sets will have two types of questions. The first will be exam-type questions that ask you to "prove" or "show" things or to respond to a written description of some empirical results. For the second type of question, you will be given data and asked to estimate an econometric model and then to interpret the estimates you obtain. In general, both generating and interpreting the estimates correctly are important, with interpretation weighing most heavily in determining the grade for each problem.

Your write-ups for the problem sets should consist of two portions. The first portion is just the answers to the questions, with whatever text is required to explain them. The second portion, on separate pages, consists of a Stata log file (or equivalent from another program) that shows how you got the answers to the empirical questions. The log file must be clear and must include comments that will allow the grader to quickly see the command or commands leading to each answer. It should not include everything you tried – just the final set of commands employed to get the answers.

Each problem set will be distributed in class the week before it is due and is to be handed in at the BEGINNING OF CLASS A WEEK LATER. No problem set will be accepted after class begins, no exceptions, no excuses, no kidding.

Research paper

The research paper should present an original applied example of one or more of the topics covered in the course. Students will be expected to: gather their own data sets; describe the purpose of their analysis; provide descriptive statistics on the data set used; describe the model and estimation procedure used; perform appropriate estimation; employ appropriate diagnostic tests; and, report, explain, and interpret the empirical results (paper will also be graded on grammar and spelling). Students must discuss their topic with the instructor prior to beginning work. The paper should be approximately 12 to 14 double-spaced, *type-written* pages in font size 12, and 1 inch margins on top, bottom, and sides. Papers must be submitted electronically (by e-mail) as a Word document or a pdf file no later than **7:30 PM Tuesday, December 9, 2014**. Further details will be supplied at a later date.

Statistical software

I support Stata, and provide problem set solution log files in Stata, but you are welcome to use alternative software such as SAS, SPSS, TSP, R, S, or Shazam or other programs such as Eviews for the problem sets if you like.

The following book provides a useful guide to the basics of Stata

Acock, Alan. 2010. *A Gentle Introduction to Stata, 3rd Edition*. College Station: Stata Press.

Course Schedule, Fall 2014

The topics for the problem sets will be some or all of the following:

Discrete choice models
Truncated and censored regression models
Heckman bivariate normal selection model
Instrumental variables models
Difference-in-differences and panel data models
Duration models
Quantile regression
Non-parametric regression and matching
Regression discontinuity designs
Robust variance estimation
Variance estimation in non-simple random samples
Bootstrapping

Students with disabilities

Students with documented learning disabilities or special needs, must contact me at least a week in advance of scheduled exams if use of the Testing Center's facilities is required. It is the student's responsibility to arrange for accommodations through the Testing Center and provide me with the appropriate documentation in the beginning of the semester. Also see http://www.pdx.edu/drc for more information.

Academic misconduct

The Student Conduct Code, which applies to all students, prohibits all forms of academic cheating, fraud, and dishonesty. These acts include, but are not limited to, plagiarism, buying and selling of course assignments and research papers, performing academic assignment (including text and examinations) for other persons, unauthorized disclosure and receipt of academic information, and other practices commonly understood to academically dishonor. The code of conduct also describes standards of behavior for all student members of the campus community. Violation of the SCC may lead to disciplinary action. Students may obtain copies of the Student Conduct Code by contacting the campus judicial officer at 503-725-4422, or buy visiting room 433 Smith Memorial Student Union.