

EC392 - Advanced Topics in Mathematical Economics: Advanced Econometrics

Pedro de Araujo

Palmer Hall 119 - Block 5 - Spring 2014

CONTACT INFORMATION *Office:* Palmer Hall 114I
Phone: (719) 389-6470
E-mail: pedro@coloradocollege.edu
Course Webpage: http://faculty1.coloradocollege.edu/~pdearaujo/ec392_metrics.html

OFFICE HOURS Monday to Thursday from 8:00 to 9:00 or by appointment

COURSE OBJECTIVE This course has three main objectives. First, it is designed to introduce students to both panel data analysis and models with categorical and limited dependent variables. It also introduces students to issues of endogeneity in economic models and, therefore, identification strategies in cross-section and panel econometrics. Second, it strives to familiarize students with Stata and how to carry out an empirical project. Third, it mainly focuses on oral communication. Students should, by the end of the course, be very comfortable presenting and discussing published and original work.

On a more practical note, the course is also designed to give students an opportunity to practice applying and interviewing for jobs. An activity around this subject is a major component of the course and will run parallel to the material taught throughout the block.

COURSE STRUCTURE Class will meet every week day morning from 9:00 to 12:00 and some week days in the afternoon between 13:15 and 14:30. Hence, students should not schedule any activity before 15:00.

Morning lectures will mainly be devoted to theory development, mathematical derivations, some applications using Stata, and presentations. Class in the afternoon will focus on Stata exercises, practice problem sessions, review sessions, and presentations. Students are expected to reserve at least 10 hours per day to work on material related to the course.

REQUIRED TEXTBOOK Wooldridge, Jeffrey M.: "Introductory Econometrics: A Modern Approach," South-Western Cengage Learning, 5th ed., 2013

OPTIONAL TEXTBOOK Cameron, Colin A. and Trivedi, Pravin K., "Microeconometrics Using Stata," Stata Press, 1st ed. (revised), 2010
Cameron, Colin A. and Trivedi, Pravin K., "Microeconometrics: Methods and Applications," Cambridge University Press, 1st ed., 2009
Long, Scott., "Regression Models for Categorical and Limited Dependent Variables," Sage Publications, 1997

COURSE ASSIGNMENTS AND WEIGHTS

- Three Weekend Projects - 15% each
- Practice Problems - 10%
- Presentations - 20%
- Job Interview Assignment - 20%
- Self-Reflections - 5%

GRADE DISTRIBUTION

A	100-94	B	86-81	C	73-68	D	60-55
A-	94-90	B-	81-77	C-	68-64	NC	55-0
B+	90-86	C+	77-73	D+	64-60		

WEEKEND PROJECTS

Every Friday students will receive a packet with all sorts of questions covering the material taught throughout the week. Students are expected to use Stata, the textbook, lecture notes, and any other supplemental material shared in class in order to complete each project. Each student is expected to work alone. Each project is due on the following Monday before class. During the Monday class (in the morning), students will then work on the project again, but in groups. Each group will have 3 hours to complete the project. The individual portion of the project accounts for two thirds of the grade, and the group assignment accounts for the remaining third.

PRACTICE PROBLEMS

Practice problems will be assigned, but not graded on a daily basis. I expect all students to complete every problem and work in groups. We will use some afternoons as problem solving sessions, where every student will have the opportunity to ask questions and solve problems on the board.

PRESENTATIONS

Throughout the block each student will have to present and discuss 2 published papers that are empirical in nature. Students are free to choose any paper and submit them for my approval by no later than the first Friday of the block. Each paper should cover panel data methods and/or limited dependent variable models. These presentations will follow the same standards as professional conferences in economics. Hence, each paper will have a presenter and a discussant. Each presentation should take between 25 to 30 minutes followed by a 5 to 10 minute discussion. I will assign the discussant for each paper within an appropriate window of time. We will spend some time throughout the block learning how to craft a professional presentation and a discussion.

JOB INTERVIEW ASSIGNMENT

A job add from the “The De Araujo Group” has been posted on SUCCESS, which is the Career Center online job board. You will have to log into SUCCESS in order to apply for the job. You should follow all of the instructions and abide by all deadlines.

Later, all qualified candidates will be receiving phone calls to schedule a 30 minute job interview. I will not directly participate in this process. My job is to assess the quality of your responses during the interview and the career center

will assess the rest. We will spend a great portion of the last day of class going over these interviews.

SELF-
REFLECTIONS

Throughout the block, you will have many self reflective activities that you are required to complete. These activities are designed to get you to reflect about the class, your study habits, organization, and your ability to think about how you think. The hope here is that you develop individualized learning processes that you can transfer to other classes and other experiences you will encounter in the future.

TENTATIVE
COURSE
OUTLINE

Week 1:

Review Multiple Linear Regression Model (including matrix form):

Estimators Derivation: Least Squares, Maximum Likelihood, and Method of Moments

Properties of Estimators: Bias, Efficiency, and Consistency

Identification Issues: Endogeneity of Regressors

Instrumental Variables, Two Stage Least Squares, and GMM

Week 2:

Panel Data Methods:

Pooled OLS

Fixed and Random Effects Models

Limited Dependent Variable Models:

Probit and Logits

Week 3:

Ordered and Multinomial Probits and Logits

Censored and Count Regressions

Survival (Hazard) Models

Selection Models

Simultaneous Equations Models (if time permits)

Week 4:

Job Interview Preparation

Job Interviews and Debriefing

Final Presentations

ATTENDANCE

Attendance is not mandatory; however, do not expect me to cover material taught in class during office hours if you were not present for that particular day unless you have proper documentation justifying your absence.

CHEATING

For every assignment in this course you must follow CC's honor code. If you have not yet done so, I encourage you to read the honor code, which can be found at the Pathfinder under Honor Council Constitution. The penalty for cheating in this course is a final grade of no credit (NC).

DISABILITY

If you have a disability that requires accommodation for this course, please see me by Wednesday, January 22, so that your needs are appropriately met. If you

have not already done so, you will need to register with and get the appropriate paperwork from the Disability Services office (227-8285). The Disability Services office is located in the Learning Commons of Tutt Library.