

**University of Colorado at Boulder  
Department of Economics**

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ECON 8848: Applied Microeconometrics, Spring 2014  
Syllabus and Schedule  
Office Hours: MW 11:00 AM-12:00 PM  
Economics 14A  
Other times by appointment

**Course Description:**

Students who are successful in this course will be well prepared to conduct empirical research across a broad range of fields, although the tools are used most frequently in the applied microeconomics fields. The course provides a “user’s guide” to many of the most commonly used econometric techniques, with a heavy focus on implementation and interpretation. We will begin the course with a STATA boot camp, quickly becoming familiar with the software package including programming techniques and data management skills. We will then move through a range of econometric topics, making sure to practice each technique in STATA. I hope to live up to the following quotation by Edward Leamer in his article (AER, 1983):

**Prerequisites:**

advanced copy (SE or MP), but the Intercooled version will allow you to complete all the requirements of this course.

I will use STATA during some lectures to demonstrate estimators and methods that we cover. If you have STATA installed on a laptop, you may find it useful to bring on those days.

### **Requirements and Grading:**

**The**

will be reweighted accordingly. There will be no make-up exams. If you foresee any conflict that will prevent you from taking an exam, please let me know as soon as possible and at least two weeks beforehand.

**A note on my role:** I will always be willing to offer you assistance with any assignment for this course, including the final paper. I will strongly suggest, however, that you form study groups for the problem sets and use the other members of your group as your initial resource in solving programming problems. In addition, I cannot generally offer help on projects that are unrelated to this course, e.g. work you are doing as part of your dissertation or as an RA for other faculty members. My goal in offering this course is to create a critical mass of well-trained graduate students who can then continue to learn more on their own and begin to serve as a resource to each other.

### Tentative Schedule

Topic	Tentative Dates
Introduction and STATA Basics	1/13, 1/15
NO CLASS – MLK Day	1/20
Advanced STATA	
Descriptive Statistics, Figures and Tables	1/22

## **Other University Policies:**

### **Disability Accommodation**

If you qualify for accommodations because of a disability, please submit to me a letter from

sexual orientation, gender identity, gender expression, or veteran status. Individuals who believe they have been discriminated against should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Student Conduct (OSC) at 303-492-5550. Information about the ODH, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <http://hr.colorado.edu/dh/>

### **Academic Integrity**

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council ([honor@colorado.edu](mailto:honor@colorado.edu); 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at

<http://www.colorado.edu/policies/honor.html> and at

<http://honorcode.colorado.edu>

## Reading List

The list below provides a guide to how to get the most out of your available resources for this course. Your most directly relevant text will be our lecture notes. They will provide you with the basics of all of the material that we cover in each class meeting. There are also two books that I think fit nicely with the applied nature of this course and offer a good complement to our in-class discussion. They are both relatively inexpensive, and I would recommend them as your best additional resources for learning the topics we cover. I also strongly recommend having one or more graduate econometrics textbooks for reference. Finally, we will read a few papers that actually apply the methods we are discussing. These are listed below in bold. Additional references that we will probably not have time for are listed in standard font. The links are active, but you will need to be on-campus or connected through VPN.

**Books with an Applied Focus.** I highly recommend getting a copy of each of these books, as they will provide a very useful supplement to my lectures and notes. Angrist and Pischke is relatively inexpensive (~\$35), and I would strongly suggest that each of you get a copy. The Cameron and Trivedi book is great, and it is specifically tailored for people learning STATA. A good strategy might be to order one for each study group (~\$70). As of this writing, they are currently listed together on Amazon as “Frequently Bought Together”

Angrist and Pischke (2009).

**AP**

Cameron and Trivedi (2009).

**CT-STATA**

**Econometrics Reference Books.** I am not going to require you to have any particular one of these. I would recommend that you find at least one of the following books that you find useful as a reference book. I have tried to include the relevant sections where possible in the main table below.

Cameron and Trivedi (2005).

**CT**

Davidson and MacKinnon (2004).

**DM**

Wooldridge (2002).

**W**

**Papers.** Papers listed in **bold** are required reading and will be discussed in class during one of the meetings scheduled for the topic. Exact dates will be announced as we see how we are progressing. The additional papers listed are for reference for the interested student.



## Topics and Readings

Readings marked with a [\*] indicate that if I were you, and I had limited time to read non-required readings, I would prioritize these.

### Introduction and STATA Basics

- **Lecture Notes**
- [\*] CT-STATA Chapter 1

### STATA Programming

- **Lecture Notes**
- [\*] CT-STATA Chapter 1.5-1.8, 4

### STATA Descriptive Stats, Figures and Tables

- **Lecture Notes**
- [\*] CT-STATA Chapter 2

### STATA Data Management

- **Lecture Notes**
- [\*] CT-STATA Chapter 2

### Functional Forms

- **Lecture Notes**
- AP – Chapter 3, various parts
- CT-STATA Chapter 3.3
- CT – Chapter 4.1-4.4

### FWL and Multiple Regression

- **Lecture Notes**
- [Lovell\(2008\) A Simple Proof of the FWL Theorem, Journal of Economic Education, Vol. 39 No. 1 \(Winter 2008\)](#)
- DM pp. 68-?
- [Zax Textbook, Chapter 12, Section 12.4 pp. 26-35](#)

### The RCT/Treatment Effects

- **Lecture Notes**
- [\*] AP – Chapter 2
- W – Chapter 18

### Omitted Variable Bias

- **Lecture Notes**
- [\*] AP – Chapter 3.2
- DM – 2.4-2.5
- W – Chapter 4.3

### Propensity Score Matching

- **Lecture Notes**

- [Smith and Todd \(2005\) Does Matching Overcome LaLonde's Critique of Nonexperimental Estimators?](#) , Vol 125, No. 1-2, pp. 305-353
- [Dehejia \(2005\) Practical Propensity Score Matching: A Reply to Smith and Todd,](#) , Vol 125, No. 1-2, pp. 355-364
- [Smith and Todd \(2005\) Rejoinder,](#) , Vol 125, No. 1-2, pp. 365-375
- [\*] CT – Chapter 25.4
- W – Chapter 18.1-18.3

Panel Data – Fixed Effects, etc.

- **Lecture Notes**
- [Ashenfelter and Krueger \(1994\) Estimates of the Economic Return to Schooling from a New Sample of Twins, \*American Economic Review\*, Vol. 84, No. 5 \(Dec., 1994\) pp. 1157-1173](#)
- [McKinnish \(2008\) Panel Data Models and Transitory Fluctuations in the Explanatory Variable.](#) Schooling ar ,ensity Sce

- [Bound, Jaeger, and BAPer \(1995\) Problems with Instrumental Variables Estimation When the Correlation Between the Instruments and the Endogeneous Explanatory Variable is Weak.](#)  
[Vol. 90, No. 430 \(Jun., 1995\), pp. 443-450](#)

- [\*] [Meyer \(1990\) Unemployment Insurance and Unemployment Spells.](#)  
[, Vol. 58, No. 4 \(July 1990\), pp. 757-782](#)
- CT – Chapter 17
- W – Chapter 20

#### Discrete Choice Models

- [Train \(2009\) Discrete Choice Methods with Simulation, Cambridge University Press](#)
- [\*] CT-STATA Chapter 15
- CT – Chapter 15
- W – Chapter 15.9-15.10