

Economics 4848- Applied Econometrics

Spring 2013, MWF 10-10:50, Humanities 1B45

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Course Website

On Desire2Learn at <http://learn.colorado.edu>

Office Hours

Tues 10-12, Wed 1-2

It is very easy to schedule appointments outside of office hours with me—I am almost always in my office during normal business hours. Just send email or talk to me before or after class.

Course Prerequisite

This class requires previous completion of Economics 3818, Intro to Statistics, or the equivalent.

Course Description

The goal of this course is to teach you how to analyze data in order to obtain meaningful inferences, in other words, to use data to say something informative about interesting questions. Because these are skills that are best learned by doing, this requires that students develop facility with a statistical software package. In this course, we will use STATA, a package particularly well suited for empirical economics analysis. While students will exert a fair amount of energy mastering STATA in order to follow the lectures and complete the assignments in this course, it is important to remember that learning STATA commands is only a means to an end, and that the key focus of this course is develop skills in econometric analysis and interpretation.

Course Materials

Textbook:

A course pack developed by Prof. Brian Cadena serves as an informal textbook. It is available in electronic form on the course website.

Stata Support:

Websites with additional on-line STATA help guides and training:

www.ats.ucla.edu/stat/stata

www.stata.com/links/resources1/html

Software:

Students are not required to purchase their own copies of STATA, as it is available in the computer lab in the basement of the economics building. Note that the economics building is closed on weekends, but remains open until 10pm on weekdays. Purchasing your own copy of

STATA will provide the convenience of working on class material outside of university computer labs. If you chose to purchase your own copy of STATA, you qualify for a substantial discount through the University's GradPlan. Information is available at: <http://www.stata.com/order/new/edu/gradplans/gp-campus.html>. Please note that **Small Stata is insufficient for this course**. Current prices for Stata/IC (Intercooled Stata) license are \$98 for 1 year and \$65 for 6 months.

Hardware:

You will need a USB memory device to store copies of data and log files from our work in class.

Course Requirements

Attendance: Attendance is absolutely crucial to success in this class. In order to re-enforce the importance of attendance, it will be factored into final grades. **Attendance will be taken regularly and any student missing more than 20% (3 weeks of class, or 9 class meetings) of the course's scheduled classes will receive a failing grade.** To be clear, these absences are intended to cover both valid (illness, car breaking down) and invalid reasons for missing class. Excused absences will therefore not be granted. I reserve the right to record an absence for students who spend substantial class time on non-class activities.

Homework: Students will regularly work on ungraded exercises during class time to practice course material. Graded homework assignments are not given. Students should, however, plan on taking time outside of class each week to: a) Review log file, class notes and in-class exercises from that week's classes. b) Using STATA and the data files to independently perform the analysis conducted in class in order to review STATA commands, interpretation of output, and key concepts from class lecture and c) Using STATA and the data files to perform additional data analysis beyond that conducted in class to further test facility course content. The course material is highly cumulative, so it is important to confirm mastery of each week's material in preparation for the next week's material. It is not sufficient to merely review several weeks of material just before an exam.

Exams: Two midterms and a final exam. The first midterm is scheduled for **Wed, Feb 20**. The second midterm is scheduled for **Fri, Mar 22**. The final is scheduled for **Mon, May 6 4:30-7:00**.

Research Paper: The goal of this course is to train you to perform and interpret original analyses of economic data. To that end, you will complete one independent research project, using the skills taught in this course. You will write a paper (roughly 8 pages, double-spaced, including figures and tables) on a topic of interest to you, focusing on original analysis of relevant data. Some course time will be spent teaching you how to download and analyze U.S. Census data, and many students will formulate a research question that can be investigated using Census data. Students are, however, free to pursue other data sources on topics of interest. I will hold individual meetings the week of Apr 8 to make sure that you have found an appropriate topic and data set and provide some individual guidance (class will be cancelled during the week to allow for individual meetings during class time). The research paper is due, in both electronic and hard copy, on the last day of classes, **May 3, by 5 pm**.

Grades

Grades will be based on:

20% Midterm 1 (Wed, Feb 20)

20% Midterm 2 (Fri, Mar 22)

30% Final Research Project (Due Fri, May 3)

30% Final Exam (Mon, May 6, 4:30-7)

Final letter grades will be based on the cumulative performance I would expect from an intelligent and hardworking student.

Some Additional Notes/Policies

Material from a Missed Class: If you miss class, you are responsible for obtaining the material you missed. There is sufficient overlap with the course pack that reviewing the relevant material there will help, but you should arrange to obtain log file/programs/notes from a classmate (not from the professor), and work through these on your own to catch back up with the class. Students will frequently work on ungraded in-class exercises, and these will be posted on the course website for students who miss class to complete on their own.

Missed Exams: Make-up exams for the midterms will not be given. Midterm exam absences will only be excused for compelling circumstances (generally family emergencies or documented illness), in which case the other course material will be re-weighted. Students anticipating conflict with an exam date due to religious observance or over-scheduling (3 or more exams on the same day) should bring these to my attention within the first 3 weeks of class.

Special Accommodations: Students with documented disabilities who may need academic accommodations should speak with me during first three weeks of the class. Also contact the Disability Services Office, Willard 322 (phone 303-492-8671).

Class Disruptions: Computers should not be used for non-class activities during class time and cell phones should be stored away during class time.

Academic Integrity: All students are responsible for knowing and adhering to the academic integrity policy of the University of Colorado at Boulder (www.colorado.edu/policies/honor.html and www.colorado.edu/academics/honorcode/). All incidents of academic misconduct will be reported to the Honor Code Council. I particularly encourage students to avoid plagiarism (portrayal of another's work or ideas as one's own) and therefore to conscientiously identify and cite all ideas or language borrowed from any other work.

Course Schedule

Week 1 (Jan 14-18): Introduction and Getting Started in STATA

Week 2 (Jan 23-25): Summarizing Continuous Data

Week 3 (Jan 28-Feb 1): Categorical Data

Week 4 (Feb 4-8): Hypothesis Testing

Week 5 (Feb 11-15): Simple Regression

Week 6: (Feb 18-22) **Wed, Feb 20- 1st Midterm**

Week 7 (Feb 25-Mar 1): Non-linear Models, Multiple Regression

Week 8 (Mar 4-8): Categorical Variables, Interaction Models

Week 9 (Mar 11-15): Omitted Variable Bias

Week 10 (Mar 18-22) Standard errors and Multicollinearity **Fri, Mar 22- 2nd Midterm**

Week 11 (Mar 25-29): spring break

Week 12 (Apr 1-5): IPUMS Tutorial

Week 13 (Apr 8-12): Individual meetings during class time to discuss final projects

Week 14 (Apr 15-19): Advanced topics: Logit Model

Week 15 (Apr 22-26): Advanced Topics: Differences in Differences Models

Week 16 (Apr 29-May 3): Advanced Topics: Fixed-Effects Models

Fri, May 3, 5 pm, Final Papers Due

Mon, May 6, 4:30-7, Final Exam