

## **Economics 4848-003: Applied Econometrics**

Spring 2019

T/Th 9:30 AM – 10:45 AM

Room: HUMN 1B45

Class Website through Desire2Learn (D2L)

No Class: March 26 - 28 (Spring Break)

Professor Francisca Antman

Office: Economics 222

Office Hours: T/Th 11AM - 12:00PM and by appointment

Phone: (303) 492-8872

Email: francisca.antman@colorado.edu (preferred method of contact)

### **Course Description & Objectives**

This course is designed as an introduction to the practice of applied regression analysis with a focus on developing skills in econometric analysis and interpretation to conduct original research in the field. A variety of data sets will be used throughout the course and students will analyze them using STATA, a statistical software package popular for conducting empirical economic research.

**Prerequisites:** ECON 3070 (Intermediate Micro) and ECON 3818 (Introduction to Statistics), or its equivalent, all passed with a C- or better. This is a hands-on course, suited to students interested in developing practical skills in applied econometrics. As such, we will review concepts such as hypothesis testing, but prior exposure is assumed. Students interested in a more in-depth theoretical presentation of some of the topics covered in this course can find complementary material in ECON 4818.

**Textbook:** There are no required texts for this course, but the lectures will draw from the course pack developed by Professor Brian C. Cadena, available on the course website. Lectures may also be supplemented with material from *Introductory Econometrics: A Modern Approach* by Jeffrey M. Wooldridge, Cengage Learning 2016. See the course website for links to useful tutorials and online resources for STATA users.

**Software:** Students are not required to purchase their own copies of STATA, as it is available in campus computer labs. Students who wish to purchase STATA for the convenience of working on their own devices, should purchase through the University Grad Plan to obtain a substantial discount. Note that you should purchase STATA/IC (currently priced at \$45 for a 6 month license), as Small STATA is insufficient for this course.

See details at: <https://www.stata.com/order/new/edu/gradplans/student-pricing/>

**Hardware:** Students should plan to bring a USB drive to every class meeting to store their work or be familiar with online storing technologies such as Google Drive.

### **Course Requirements**

1. Class participation and attendance are required, including contributing to our class discussions. As per department policy, students who do not attend one of the first three class meetings will

be administratively dropped from the course. Unless otherwise noted in class or on the course website, you are responsible for the material covered in class, so it is in your interest to attend. I may also present exam questions drawn from our class discussions, so it is important to take careful notes. Throughout the semester, we will do exercises in class that will help prepare students for exams. These exercises will be posted on the course website and we will go over them in class. I may collect your responses to the exercises at random points throughout the course. While these assignments may not be formally graded, I will count your level of effort on these exercises along with your attendance and potentially also your participation (e.g. answering questions posed to the class) throughout the course. Up to two lost participation points will be forgiven at the end of the semester. If you miss a class, you are responsible for obtaining notes on the material we covered from another classmate. You are welcome to visit my office hours to discuss the material you missed, but not before you have gone over the material yourself through notes and the course pack if necessary.

2. There will be two midterm exams during class time (see below for dates). Please review these dates carefully at the beginning of the semester. If you foresee any legitimate conflict with these dates, please see me as soon as possible so that we may plan accordingly. Otherwise, there is no excuse for missing an exam unless there is a medical or family emergency. In all other cases, failure to take an exam will result in a zero for that exam. If a legitimate emergency arises on the day of an exam, the remaining exam(s) will be re-weighted
3. You will complete one independent original research project that will culminate in a final research paper demonstrating the skills taught in this course. The length will be about 6-8 double-spaced pages using 12 point font, including figures and tables. You will determine the research topic and the assignment will focus on original econometric analysis of a relevant data set to address your research question. Some class time will be devoted to downloading and analyzing U.S. data sources as a tutorial. You may choose to base your research project on suggested data sources, however, you are free to choose another data source instead. I will hold individual meetings to discuss students' research projects and provide individual guidance toward the end of the semester. See below for individual meeting dates and due date of the final research paper. The final paper will be submitted in hard copy and electronically so that it may be checked for originality. Late assignments will result in *at least* one grade level reduction in the assignment grade for each day late and may result in a 0 for the assignment.
4. There will be one cumulative final exam at the end of the course. See below for date and time.

### **Grading**

Attendance, In-class Exercises, Homework, & Participation: 10%

Midterm Exam 1: 20%

Midterm Exam 2: 20%

Final Research Paper: 20%

Final Exam (cumulative): 30%

## **Additional Policies**

### **Accommodation for Disabilities**

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the [Disability Services website](#). Contact Disability Services at 303-492-8671 or [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu) for further assistance. If you have a temporary medical condition or injury, see [Temporary Medical Conditions](#) under the Students tab on the Disability Services website.

### **Classroom Behavior**

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on [classroom behavior](#) and the [Student Code of Conduct](#).

### **Honor Code**

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code ([honor@colorado.edu](mailto:honor@colorado.edu)); 303-492-5550). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the [Honor Code Office website](#).

### **Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation**

The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (including sexual assault, exploitation, harassment, dating or domestic violence, and stalking), discrimination, and harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or [cureport@colorado.edu](mailto:cureport@colorado.edu). Information about the OIEC, university policies, [anonymous reporting](#), and the campus resources can be found on the [OIEC website](#).

Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

### **Religious Holidays**

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, please review the course schedule at the beginning of the semester and see me as soon as possible regarding any conflicts due to religious observances.

See the [campus policy regarding religious observances](#) for full details.

### Economics 4848 Tentative Course Outline, Spring 2019

*Note that the dates listed below are a rough guide to the timeline of the course. We may move through the material somewhat faster or slower than presented below. You should come to class to stay updated on the progress of the course.*

Week	Dates	Material
1	Jan 15-17	Introduction --Economic Research Questions
2	Jan 22-24	Basics of STATA --Loading and Viewing Data
3	Jan 29-31	Describing Data --Summary Statistics and Graphs
4	Feb 5-7	Hypothesis Testing -- t Tests
5	Feb 12-14	Simple Regression -- Continuous and Dummy Variables
6	<b>Feb 19</b> Feb 21	<b>Midterm Exam 1</b> --Review Solutions in Class
7	Feb 26-28	Multiple Regression --Categorical Variables
8	Mar 5-7	Multiple Regression, continued --Interaction Models
9	Mar 12-14	Multiple Regression, continued --Omitted Variable Bias
10	<b>Mar 19</b> Mar 21	<b>Midterm Exam 2</b> --Review Solutions in Class
11	Mar 26-28	No classes—Spring Break
12	Apr 2-4	Final Project Tutorial --Working with IPUMS Data
13	Apr 9-11	Individual Meetings --Discuss Final Projects
14	Apr 16-18	Advanced Topics --Limited Dependent Variables
15	Apr 23-25	Advanced Topics, continued --Fixed Effects & Difference-in-Differences Models
16	Apr 30 <b>May 2</b>	Course Review <b>Final Research Paper Due by 5PM</b>
	<b>Wed May 8</b>	<b>Final Exam (cumulative) 4:30-7:00PM</b>