Economics 4848 Applied Econometrics
Fall 2018

Professor J. Klein
O ce: ECON 04A
O ce Hours: T/Th 2-3pm or by appointment/email
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Course Description

Applied Econometrics provides an overview of econometric techniques commonly used in applied research in microeconomics. Methods and topics covered in this course will help students develop a deeper understanding of econometrics as well as learn to use STATA, a statistical software package commonly used in economics. Learning to use STATA will take a signi cant amount of time and e ort but will be extremely valuable as it is much more powerful than what you can do in Excel, EViews, etc. Students will apply the econometric models using data from the US Census Bureau and the Bureau of Labor Statistics. In addition, students will be able to apply these skills to a research topic of their choosing.

Typically each week we will discuss the theory for the current topic and then spend some time working with data to apply the theory in STATA. This data analysis that we do in class will be similar to your assignments, however the theory portion will also be covered on exams.

Prerequisite

This class requires previous completion of Econ 3070, Intermediate Micro, and Econ 3818, Intro to Statistics, or the equivalent.

Course Materials

There is no required text but you may nd the following resources helpful:

> Introductory Econometrics: A Modern Approach by Je ery M. Wooldridge

> Using Econometrics: A Practical Guide by A.H. Studenmund

> Prof. Brian Cadena's Econ 4848 Course Pack (available for purchase from the bookstore)

Software: We will be learning to use a statistical software program called STATA in class. For all assignments, projects, and exams you will be required to complete all analysis using

You can find a list of other campus labs with STATA at: http://webdata.colorado.edu/labs/softwaresearch/

If you choose to purchase your own copy of STATA, it will allow you to work on assignments and your project outside the computer labs. Students can receive a discount on the software through the Universitys GradPlan. Information is available at: http://www.stata.com/order/new/edu/gradplans/student-pricing/ I would suggest Stata/IC license which is $45 for 6 months.

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

Grade Breakdown

Grades for this course will be based on the following criteria:

Assignments (15% total)

Data project and presentation (20%)

2 Midterm Exams (20% each)

Final Exam (25%)

Final grades will be determined by your cumulative performance at the end of the semester, and this may or may not correspond to the typical ten-point grading scale (A's are 90-10, B's are 80-89, etc.) If the final distribution of grades are lower than expected, I reserve 34(80-89,a48(y)-381(:h1(g

Students must take exams at scheduled times so ensure now that you can attend class the dates of the exams. Exams may not be taken early/late and no make ups are given. If you must miss a midterm exam due to an emergency the weight of the midterm will automatically be divided between the other midterm and nal exam making each worth 30% of your grade. Midterm exam scores will not be dropped due to poor performance or lack of preparation. You cannot miss both midterm exams.

Final Exam (25%): The nal exam is Wednesday, December 19th from 4:30-6:30pm. This exam cannot be skipped or taken at another time so plan accordingly.

Data Project and Presentation (20%): Students may work alone or with one other student on a data analysis project applying what you've learned in the course. Assignments are due at 10:00pm unless otherwise noted. Your written project is due by 10:00pm on Sunday, December 16th. You should start thinking about your topic as soon as possible at the beginning of the semester. Your project should pose a testable economic question that can be answered using one of the techniques we discuss in applied econometrics and using individual level data. A sample outline of what to include in your project: Introduce your research question and why it is an important topic to study, citing any relevant sources. Describe the data and empirical technique(s) you use. Conduct one or more types of empirical analysis on your data using techniques from the course. Discuss and interpret your empirical ndings. (Roughly 8-10 pages, double-spaced, including gures and tables.) All tables or gures included should be nicely formatted and concise, i.e. not just copy/pasted from the STATA output.

Your research question must be something that can be answered using the individual level data that is available in either the US Census Bureau's American Community Survey or the Current Population Survey. We will spend time in class on what is available and how to extract and build your data set from the data repository IPUMS where these surveys are stored. This data source is required to be used by all students unless given special permission by the instructor.

As part of your grade for the project, your chosen research question will be due on Oct. 9th, a project proposal will be due on Oct. 21st, your cleaned data set will be due on Nov. 4th, and your preliminary analysis will be due on Nov. 11th. Individual meetings will be scheduled the week of November 12-16, in lieu of regular class. In addition, each student/group will give a presentation the week of December 10-14 discussing their research question, data, methods, and results. Both students must present part of their project if working in a group. Due dates for these portions of your project appear in blue in the schedule.

Your overall grade for the nal project will be determined as follows: Research Question (5 points), Project Proposal (20 points), Data set submission (10 points), Initial Data Analysis (20 points), Presentation (15 points), Final Paper (20 points), Corrections to Outline & Proposal (10 points).

Additional Policies

Attendance: Attendance is an absolute necessity in this course. It is where I can help guide you in learning STATA and completing a good research project, and you can get feedback on where improvement is needed. Students are expected to be in attendance on time for every class, as it may be difcult for you to make up the material and fully understand programming in STATA otherwise. It is your responsibility to obtain any material/notes from a class you miss from one of your classmates. Attendance will be recorded every class period and any student missing more than 6 class periods will automatically fail the course. These absences up to 6 are intended to cover any manner of reasons why you might need to miss class, valid or otherwise. These penalties are non-negotiable. Those arriving late, leaving before class is dismissed, spending signicant time on non-class activities will also be counted as absent.

Disability Accommodations: 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 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 and discuss your needs with your professor.

Religious Observances: Campus policy regarding religious observances requires that faculty make every eort to deal reasonably and fairly with all students who, because of religious obligations, have conicts with scheduled exams, assignments, or required attendance.

Honor Code: All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the academic integrity policy. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, resubmission, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273) and will result in a failing grade for the course. Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code Council as well as academic sanctions from the faculty member. Additional information regarding the academic integrity policy can be found at the Honor Code Oce website. This misconduct includes, but is not limited to: Represent the work of others as their own, U otheir oe

tion based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political a liation or political philosophy. Individuals who believe they have been subject to misconduct under either policy should contact the O ce of Institutional Equity and Compliance (OIEC) at 303-492-2127. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding sexual misconduct, discrimination, harassment or related retaliation can be found at the OIEC 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 di erences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. 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.

Since the course is in the computer lab, I realize that there can be the temptation to work on other things during lecture, browse the internet, etc. However, as a courtesy to me and your classmates, as well as to ensure you understand the presented material, I ask that during lectures (non-lab activities) you only use the computers to follow along with the slides and not for any other purpose.

Tentative Class Schedule

Week	Content	Assignments
Week 1	Aug. 27-31 Course Information, types of data Statistics and Sampling, ACS/CPS Introduction	
Week 2	September 3-7 Introduction to STATA, Creating Variables	
Week 3	September 10-14 Data management, Error checking Exploring Continuous Data, Categorical Data	Homework 1 Due 9/11
Week 4	September 17-21 Bivariate Regression, Hypothesis Testing	Homework 2 Due 9/18
Week 5	September 24-28 Distribution of $\wedge$ Classical Assumptions and Violations	Homework 3 Due 9/25
Week 6	October 1-5 Simple Multivariate Regression, Data Project Overview Thurs., October 4: Exam 1	Research Q due 10/9 in class
Week 7	October 8-12 Non-linear Models	