Economics

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Economics 11
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Course Canvas site

Economics 4848-002
Applied Econometrics
MWF, 2:00-2:50
HUMN 1B45
Office Hours: MW 3:00-4:00

Course Description:

This course is designed to offer you solid foundation in empirical econometrics and experiences in analyzing real life data. Most importantly this course can provide you with critical skills in the *Age of Big Data*. In doing so, we will first review the basic theoretical concepts in probability and statistics in order to understand regression models and hypothesis testings. Meanwhile we will spend a substantial amount of time mastering Stata, a statistical computer software package designed especially for empirical economic analysis. You will learn to use Stata to conduct descriptive and regression analysis using rigorous statistical methods and models. I will also introduce you to the increasingly popular statistical software, R, and you can choose either to use R or Stata during this class. However, the main emphasis will be on mastering Stata for its ease of use.

Prerequisite(s):

To enroll in the course, you must have completed Economics 3818 or an equivalent course. We will review the necessary math tools with the assumption of prior exposure. Students with a continuing interest in econometrics will find complementary material in Economics 4818 as it provides more depth at the theoretical level.

Course Materials:

1. Recommended textbook:
   Prof. Cadena's Coursepack.

   Optional textbook and notes:
   Introductory Econometrics: A Modern Approach by Jeffrey

Stata Tutorial by German Rodr guez at Princeton University
Interactive R Tutorial

2. Additional lecture notes will be posted on the course website.

3. Students are not required to purchase their own copies of Stata. You can access Stata in the computer lab in the basement of the Economics building (Econ 6) or type in \stata" in the software name eld on the OIT lab software search page. Note that the Econ building is closed on weekend but remains open until 9pm on weekdays. Those who are interested in purchasing a personal copy can go through the University's GradPlan website in order to receive a substantial discount (starting at $45). Among the di erent versions that are available, Stata/IC is su cient for the requirement of this course.

Course Objectives:
At the completion of this course, you will be able to:

{ There will be two midterms and a final exam. The final exam is *comprehensive* and is scheduled on May 9 from 1:30 pm to 4:00 pm.

Research Project

{ One of the main goals of this class is to train you to be able to perform original economic analysis of the data. To this end, you will need to complete one independent research project using the skills that you will learn throughout the course. You may work with a partner, but no more than two people may work together. There are three stages of the project. 1) Research proposal (due on Feb. 23) that provides the research question, data source and research design. We will have individual project meetings. Each group will have 15-20 minutes to discuss the research project with me using the research proposal as the basis. Failure to turn in the proposal or show up to the meeting will lead to a 15% penalty on the final project grade. During the final weeks in April, each group will give a 10-15 minutes presentation of your work. This will help you to gain feedback from me and your classmates so that you can improve your paper before submitting your final draft. The presentation counts for 35% of the final project grade. The final draft is due on Friday, May 4.

Additional Notes and Policies:
Academic Integrity
In addition to skills and knowledge, your University education also aims to teach students appropriate Ethical and Professional Standards of Conduct. Detailed policies can be found on the University website. All incidents of academic misconduct will be reported to the Honor Code Council. All work and ideas should be properly cited. Any type of plagiarism when discovered defaults to a failing grade in this course. The bottom line: When in doubt, DO WITHOUT !

Special Accommodations:
If you require special accommodation because of disability, please submit a letter from Disability Services in a timely manner (at least two weeks before the exams or other due dates). Disability Services determines accommodations based on documented disabilities. You may contact Disability Services at 303-492-8671 or b email at dsinfo@colorado.edu

If you have a temporary medical condition or injury, see Temporary Injuries for guidelines and discuss your needs with your professor.

Missed Exams
Make-up exams for the midterms will not be given. Midterm exam absences will only be excused for compelling circumstances (family emergencies or documented illness), in which case the other course material will be re-weighted. Students anticipating conflict with an exam 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.

Topics to be covered (tentative):

Intro & Review

{ Unit 1: Introduction to quantitative economic researches (Ch. 1)

{ Unit 2: Review of probability and statistics (Append. B & C)

{ Unit 3: Con dence Interval & Hypothesis Testing (Append. C)

{ Unit 4: Introduction to Stata and R

{ Unit 5: Descriptive and graphic analysis with Stata

Regression Analysis

{ Unit 6: Overview of regression analysis

{ Unit 7: Ordinary least square (OLS) (Ch. 2)

{ Unit 8: Simple regression model

{ Unit 9: Multivariate regression model (Ch. 3)

{ Unit 10: The classical OLS model assumptions (Ch. 2)

{ Unit 11: Functional form speci cation

{ Unit 14: Simple time series analysis (Ch. 10)

{ Unit 15: Panel Data Method (Ch 13, 14)

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