Prof. Chrystie Burr

chrystie.burr@colorado.edu

Economics 11

(303)492-0863

Course D2L site

Economics 4848-001

Applied Econometrics

MWF, 11-11:50

HUMN 1B45

Office Hours: M 2:00-3:00

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.

Prerequisite(s):

9pm on weekdays. The library lab is open some hours on the weekend with details on the OIT website. 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 $69). 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:

1. Be familiar with basic probability and statistical terms and models.
2. Conduct regression analysis on real-life data in a meaningful way.
3. Understand the power and the limits of regression analysis.
4. Diagnosis the imperfection in the data set by using statistical tests.
5. Construct hypothesis and use proper statistical testing to \accept"/reject the hypothesis.
6. Demonstrate the ability to conduct meaningful economic research by a) proposing research question(s) b) acquiring necessary data (c) analyzing data (d) interpreting the results from (c) to address (a).

Grade Distribution:

Assignment	Weight	Due Date
Attendance & Course participation	5%	
Homework	15%	
Midterm Exam	20%	Thur., Feb. 20 (tentative)
Research Paper & Presentation	30%	March 13: proposal due (15%)
		April 3: paper draft due (10%)
		April 13-24 in-class presentation (25%)
		5pm, May 1: nal draft due (50%)
Final Exam	30%	Wed., May 6 (4:30pm-7pm)

Course Policies:

General

{ Attendance is critical to success in this class. In order to incentivize you to do so, attendance will be taken. This will contribute to 5% of the nal grade. You are allowed to miss two classes in the entire semester. Once beyond the two absence, you will receive a zero for the attendance grade.

{ The deadline to drop the course with no record and at no cost is 11:59pm on Jan. 28. You can drop the course from MyCUInfo with a 'W' on the transcript between Jan. 29 to March 20. After that, it requires signature from both your instructor and the Dean.

{ All exams are closed book, closed notes but you are allowed to use one-page cheat sheet.

Homework

{ There are three take-home problem sets. You are encouraged to work independently since you need to know how to solve problems and run regressions on your own during the exams.

Exams

Topics to be covered (tentative):

Intro & Review

- Unit 1: Introduction to quantitative economic researches (Ch. 1)
- Unit 2: Review of probability and statistics (Ch. 2 & Ch. 3)
- Unit 3: Con dence Interval & Hypothesis Testing (Ch. 3)
- Unit 4: Introduction to Stata
- Unit 5: Descriptive and graphic analysis with Stata

Regression Analysis

- Unit 6: Overview of regression analysis
- Unit 7: Ordinary least square (OLS) (Ch. 4)
- Unit 8: Bivariate correlation & Bivariate regression model
- Unit 9: Multivariate regression model
- Unit 10: Steps in applied regression analysis
- Unit 11: The classical OLS model assumptions (Ch. 4)
- Unit 12: Regression Diagnostics - How to deal with imperfect data
- Unit 13: Omitted variable problem
- Unit 14: Multicolinearity
- Unit 15: Serial correlation
- Unit 16: Heteroskedasticity
- Unit 17: Functional form speci cation

Data Management

- Unit 18: Working with IPUMS data and Running your own regression project
- Unit 19: Merging data sets

\Live as if you were to die tomorrow. Learn as you were to live forever."

/ Gandhi