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Economics 11
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Course D2L site

Economics 4848-002
Applied Econometrics
TTH, 9:30-10:45
HUMN 1B45
Office Hours: TTH 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):
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:
   Introductory Econometrics: A Modern Approach by Jeffrey M. Wooldridge. 5th Edition.

   Optional textbook and notes:
   Prof. Cadena's Coursepack.
   Introduction to Econometrics by James H. Stock and Mark W. Watson. 3rd Edition.
   Using Econometrics: A Practical Guide by A.H. Studenmund. 6th Edition.
   An Introduction to Modern Econometrics Using Stata by Christopher Baum
   Microeconometrics Using Stata by A. Colin Cameron and Pravin K. Trivedi
   Online resources:
   UCLA Institute for Digital Research and Education
   Stata Tutorial by German Rodriguez at Princeton University
2. Additional lecture notes will be posted on the course website.
3.

(Norlin M350). Note that the Econ building is closed on weekend but remains open until 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.

- There will be one midterm and a nal exam. The rst midterm is scheduled to be on Thursday, Feb. 18 and covers the material up to that point. The nal exam is comprehensiveand is scheduled on May 1 from 4:30 pm to 7:00 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 March 13) that provides the research question, data source and research design. We will have individual project meetings during the

Topics to be covered (tentative) :

Intro & Review

- Unit 1: Introduction to quantitative economic researches (Ch. 1)
- Unit 2: Review of probability and statistics (Appen. B & C)
- Unit 3: Con dence Interval & Hypothesis Testing (Appen. c)
- 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. 2)
- Unit 8: Bivariate correlation & Bivariate 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 12: Steps in applied regression analysis
- Unit 13: Regression Diagnostics - How to deal with imperfect data
- Unit 14: Simple time series analysis (Ch. 10)
- Unit 15: Panel Data Method (Ch 13, 14)
- Unit 16: Limited dependent variable models (Ch. 17)

Data Management

- Unit 17: Working with IPUMS data and Running your own regression project

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

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