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ECON 375

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ECONOMICS 375: APPLIED ECONOMETRICS SYLLABUS

Overview

Description: This class will introduce you to a range of empirical methods and challenges in economics and other social sciences. The emphasis is on applications. You will learn when different methods are appropriate and why. You will apply the methods discussed to a real data set in an end-of-term paper. Successful students will be prepared both to understand and to produce empirical work in social sciences.

Instructor: Dean Scrimgeour

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Textbooks: (Required) Jeffrey Wooldridge, *Introductory Econometrics*, Fifth Edition, Southwestern, 2013. You may use an earlier edition if you wish, but lectures and reading assignments will follow the fifth edition. (Recommended) Joshua D. Angrist and Jörn-Steffen Pischke, *Mastering 'Metrics: The Path from Cause to Effect*, Princeton, 2014.

Website: sites.google.com/a/colgate.edu/econ375, for some readings, problem sets, and other materials.

Prerequisites: Econ 251, Econ 252, and Math 102 (or equivalent).

Requirements:

1. Laboratories (20%); there will be eleven labs, of which ten will count toward your grade
2. Problem sets (10%); there will be five problem sets, plus a sixth that will not be collected
3. Empirical project (in pairs) (20%), due in two parts on **30 March**, 5%, and **29 April**, 15%
4. Midterm examination (20%), on **4 March** in class
5. Final examination (30%),

Learning Goals

Econometrics: Consumption

After taking this class, you should be a sophisticated consumer of econometrics. That means you should be familiar with different kinds of data. You should be able to interpret regression output. You should be able to assess the strengths and weaknesses of different empirical approaches. Your skills in this area will be developed in lectures, in readings, in problem sets, and in discussions with your classmates.

Econometrics: Production

After taking this class, you should be a competent producer of econometric analysis. You should be able to operate some econometric software. You should be able to estimate regression models of many kinds. You should be able to correct or adjust for a range of problems your empirical model might have. You should be able to present your results in graphs, tables, and words that are clear to a reader. Your skills in this area will be developed in problem sets, labs, and the empirical report.

Lectures

The lectures for this class will present different aspects of econometric analysis. I expect your active participation in lectures. Ask questions. Answer questions. Participate in discussions of reading material. Come to lecture prepared. (That means you should have an idea what the lecture will be about, and have consulted the readings. You should be prepared to sit in the class for the full time period, without disturbing the class by leaving partway through.)

Readings

The class draws heavily on material in the textbook by **Wooldridge**. I will announce reading assignments in lecture. Wooldridge's book is an excellent introduction to econometrics. I hope you will get a lot out of it, and that it will be a faithful companion for years to come. There are many other good econometrics textbooks available and you are welcome to consult these if you think it will help. A partial list follows:

- [Ashenfelter et al. \[2003\]](#)
- [Gujarati and Porter \[2008\]](#)
- [Halcoussis \[2005\]](#)
- [Kennedy \[2003\]](#)
- [Stock and Watson \[2007\]](#)

In addition, we will read a variety of research papers written by economists emphasize particular techniques. A tentative list of papers is provided below. These papers will be posted or linked to on the class website. We will cover approximately one journal article every two weeks in addition to the textbook readings. I recommend the following approach with these articles. Make sure you

take something away from the paper. Ask yourself: what is the goal of the paper? What are the data used? What are the key results? What alternative approaches could have been taken? Do you find the results convincing? Do not get bogged down in technical details (unless those technical details were the reason the paper was assigned!). Discuss the paper with at least one classmate before the class in which the paper is discussed.

Labs

Lab sessions are designed to give practical experience with econometric software and with presenting empirical analysis. They will happen approximately weekly. You should expect to work on the lab projects beyond the allotted lab time. The lab is a designated time when you will receive instruction and be able to ask questions about the software you use and the output it produces, though these questions are welcome at other times too. Lab reports will be due in class on Tuesday following the lab.

You should aim to become more independent over the course of the semester. In particular, one of the major skills you should aim to develop is the ability to debug your own computer code. You should also develop sources of information about how to use the software to do what you want to do. (Suggestions: the Help menu, Google, www.ats.ucla.edu/stat/, *The Little SAS Book*, your friends and classmates. These are the same resources that professional economists use to advance their abilities.)

You should write up a concise and clear lab report for each week. I encourage you to work with others in the class. However, you must turn in a lab report that represents your own work. Plagiarism prohibitions apply to lab reports too.

Labs will focus on SAS and Stata, two widely-used and powerful software packages. These programs are also expensive. There are many other packages available for doing the kind of analysis in econometrics, and some are even free. For future reference, if you need to do some econometrics but you do not have SAS or Stata, you can try R or Gretl, both of which are freely available.

Expectations

1. Students entitled to extra time for exams or who have special learning needs should discuss these with Academic Support and Disability Services and me as soon as possible.
2. While studying and working on problem sets in groups is encouraged, except for the group report any work you turn in should be your own. You should write up problem set answers independently, for example. Above all, it is presumed that you will comply with the Colgate University Academic Honor Code.
3. Problem sets and labs turned in late will face a penalty. Plan ahead so you can turn your work in on time.
4. Please refrain from using your laptop computer or cell phone in class. Exception: when you are referring to a paper we are discussing.

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