POLS 7014: Intermediate Political Methodology

Spring 2020
Tuesdays, 3:30-6:15pm
Journalism 507 and International Affairs Computer Lab

Course Instructor: Dr. Mollie Cohen
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Office Hours: Th: 3:30-5pm
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Course Description:

This course presents an introduction to commonly used statistical tools for conducting causal and descriptive inference. Chief among these is ordinary least squares (OLS) regression, one of the most commonly used methodological tools in the social sciences. We will spend most the semester building up and breaking down this foundational model, with additional time devoted to special topics. By the end of the semester, students should understand how OLS models are estimated, the assumptions on which these models rest, and the consequences of violations of these assumptions. Students should also be able to read and interpret regression tables, and to estimate multiple regression models using standard statistical software packages.

Required Readings:

Required:

- Wooldridge, JM. 2009. *Introductory Econometrics: A Modern Approach.*

Recommended:

- Angrist, Joshua D., and Jörn-Steffen Pischke. 2008. *Mostly harmless econometrics: An empiricist's companion*. Princeton university press.
- Imai, Kosuke. 2018. *Quantitative social science: An introduction*. Princeton University Press.
- Freedman, David A. 2009. *Statistical models: theory and practice*. Cambridge University Press.

Course Requirements:

Reading: You are responsible for reading all assigned material for each class period. In rare cases, readings may be adjusted during the semester.

Problem Sets, Lab Groups, and Office Hours: There are ten problem sets over the course of the semester. Problem sets are due by 5pm on the Monday after the class in which they are assigned. Problem sets are worth 4.5 points each.

Most of the assignments in this class will require you to spend a significant amount of time computing. Trouble shooting code can be extremely frustrating and time consuming, but the best way to learn how to code is to make and fix your own errors. You should therefore plan to spend several hours on problem sets that include a coding component. For each assignment, you will be assigned a **lab group,** a small group of your peers with whom you are expected to communicate and collaborate about computing challenges. Because I expect you will be trouble shooting with your group, the final code you submit may be very similar. However, ***the write up for all assignments must be yours and yours alone***. You will receive assignments in class on Tuesday and my **office hours** are on Thursdays. If you choose to attend office hours for help with problem sets, you must bring: 1. your complete, commented code, and 2. a detailed description of your attempts with your lab group to resolve the issue. If you are seeking help on a problem set, I recommend attending office hours with other members of your lab group.

Final Paper: There are no exams for this class. Instead, you are expected to write a 25-30-page academic paper. You may replicate and extend the analysis from an existing paper or create an original model of your own. All papers must include an introduction, theory section, a multiple regression model, tests for violations of assumptions, and a complete list of referenced work (this does not count toward the page limit). You must also turn in your complete, commented code and datasets for replication. More detailed instructions will be provided in class.

Final Presentation: During the last weeks of class, you will give a 12-minute conference-style presentation of your final paper. In addition to giving the presentation, you are expected to engage actively with comments and questions from your classmates, and to incorporate this feedback into the final paper draft. More detailed instructions will be provided in class.

Computing: Many of your problem sets will require you to use statistical computing software. You may use Stata or R, but you must include complete, commented code so that your results can be replicated by someone with no knowledge of the project.

Course Grade:

45% Problem Sets
45% Final Paper
10% Final project presentation

Late or Missed Assignments:

If you do not complete assignments, you will receive a zero for the assignment unless you have a medical excuse, religious obligation, or family emergency. Late final papers will receive an immediate deduction of half a letter grade, and an additional half letter grade per day late.

Academic Honesty Policy:

The academic honesty policy of the university is supplemented (not replaced) by an Honor Code which was adopted by the Student Government Association and approved by the University Council May 1, 1997, and provides: "I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others." All students agree to abide by this code by signing the UGA Admissions Application.

Course Outline

January 7. Why are we here?

- Reading:
    - Wooldridge, Ch. 1
    - Imai, Kosuke. 2018. *Quantitative Social Science: An Introduction*, pp. 46-69.*

January 14. Probability, t-tests, differences of means

- Reading:
    - Wonnacott & Wonnacott (Chs. 8-9)

Problem set 1 [due 1/20]

January 21. OLS: Simple regression model

- Reading: Wooldridge, Ch. 2

Problem set 2 [due 1/27]

January 28. OLS: Multiple regression model

- Reading: Wooldridge, Ch. 3

Problem set 3 [due 2/3]

February 4. Hypothesis Testing

- Reading: Wooldridge, Ch. 4

Problem set 4 [due 2/10]

February 11. Broken Assumptions (1)

- Reading: Wooldridge, Ch. 5

Problem set 5 [due 2/17]

February 18. Broken Assumptions (2)

- Reading: Wooldridge, Ch. 8

Problem set 6 [due 2/24]

February 25. Broken Assumptions (3)

- Reading: TBD

March 3. Paper meetings: bring your project proposal to your allotted meeting time

- No reading

Problem set 7 [due 3/16]

March 9-13: Spring Break!

March 17. Interactions

- Reading: Wooldridge, Ch. 6

Problem set 8 [due 3/23]

March 24. Dummy variables

- Reading: Wooldridge, Ch. 7

Problem set 9 [due 3/30]

March 31. Special Topics: Difference in difference

- Reading: Angrist & Pischke, pp. 227-243

Problem set 10 [due 4/6]

April 7. Special Topics: Regression discontinuity

- Reading: Angrist & Pischke, Ch. 6 (pp. 251-267)

April 14. Paper presentations I

April 21. Paper presentations II

Final paper due electronically May 1, by 12pm (noon)