GOV 391L: Statistical Analysis in Political Science II
Spring 2018
TTH 2:00-3:30pm, GAR 0.120

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Course Description

This course will introduce students to linear regression, diagnostics, and the presentation and interpretation of results. The course will require a significant time commitment from most students and will move at a fairly rapid place, covering a good deal of material beginning with an introduction to Ordinary Least Squares (OLS) regression models and ending with an overview of some of the more advanced statistical tools used in political science research. In addition to the class meetings, students are expected to keep up with the readings and problem sets and attend weekly discussion sections that will focus on reviewing material and introducing students to the computing tools used in the course, particularly the R statistical computing environment.

Course Requirements and Grading

Your grade in this course will be based on four components as follows:

Problem Sets	45%
Midterm Exam	25%
Final Presentation	10%
Final Paper	20%

There will be six problem sets assigned over the course of the semester. Students are encouraged to work in groups on problem sets and in studying for exams, but all work should be written up individually. All problem sets should be typed up in LaTeXor R Markdown. When R is used for a problem set, students should include a clean copy of their code in a fixed width font along with the write up. Problem sets will only be accepted as hard copies and should never be emailed to the professor or TA without explicit prior approval. Late assignments will not be accepted.

The midterm exam will be an in-class exam on the material covered during the first two units of the course (Regression and Diagnostics) and is tentatively scheduled for April 3.

In lieu of a final exam, students will complete a final project consisting of a presentation and a paper utilizing the tools you will learn this semester. The final paper will be a complete research paper that includes a well-defined research question, theory, hypotheses, results, and robustness checks. You have two options for this project: 1) a replication and extension paper in which you take a previously published paper in political science and obtain the data to replicate the author's original results and extend the paper in some way, such as revamping the analysis or testing an alternative hypothesis, 2) an original research paper using existing data sources. The paper will be due May 11.

The final presentations will be in the style of conference presentations in that you will have 12-15 minutes to present your work and one of your classmates will be assigned as your discussant to provide feedback on your research. You will need to provide your discussant with an outline or draft of your paper at least a week before the presentation (including all results). Discussants will need to read the paper and prepare 2-3 minutes of comments.

Required Texts

- Samprit Chatterjee and Ali S. Hadi. *Regression Analysis by Example*. Wiley, Hoboken, NJ, 5th edition, 2012

- John Fox and Sanford Weisberg. *An R Companion to Applied Regression*. Sage Publishing, 2011

In addition to the required texts, you will need R, R Studio, and LATEX installed on your computer. Journal articles will also be assigned throughout the semester to provide examples of regression applications.

Recommended Texts

I recommend picking up a second regression text of your choosing that you can reference when you need more information. A few of the texts I like are listed below.

- William H. Greene. *Econometric Analysis*. Pearson, 8th edition, 2017. (If you intend to study methods, I strongly advise picking up a copy of Greene as it is an excellent reference that you'll use repeatedly.)

- Damodar N. Gujarati and Dawn C. Porter. *Basic Econometrics*. McGraw-Hill, 5th edition, 2008.

- Peter Kennedy. *A Guide to Econometrics*. Wiley-Blackwell, 6th edition, 2008.

- Jeffrey Wooldridge. *Introductory Econometrics: A Modern Approach*. Cengage, 6th edition, 2016.

Administrative Issues

Academic Dishonesty

All violations of university academic conduct guidelines, including plagiarism, will be referred to the Dean of Students and will result in a zero on the assignment or exam in question. Plagiarism is the use of others' ideas or work without credit and/or presenting derivative work as one's own. This includes, but is not limited to, cutting and pasting from someone else's work or an internet source, failing to identify exact quotes, failing to cite a source for information that is only available from that source, failing to cite a source for an idea or argument you borrowed from that source, and turning in work that is not your own.

Disability Accommodations

Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities (512-471-6259, http://www.utexas.edu/diversity/ddce/ssd/).

Religious Holidays

By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, I will give you an opportunity to complete the missed work within a reasonable time after the absence.

Emergency Evacuation Policy

Occupants of buildings on the University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building. Students requiring assistance in evacuation shall inform their instructor in writing during the first week of class. Information regarding emergency evacuation routes and emergency procedures can be found at: utexas.edu/emergency.

Course Outline

This is an approximate schedule that is subject to change depending on how quickly we move through the material.

January 16: Introduction
- Chatterjee and Hadi, Chapter 1

January 18: Review of Bivariate Regression
- Chatterjee and Hadi, Chapter 2.1-2.5
- Edward R. Tufte. The relationship between seats and votes in two-party systems. *American Political Science Review*, 67(2):540–554, 1973

January 23: Review of Bivariate Regression
- Chatterjee and Hadi, Chapter 2.6-2.11
- Robert S. Erikson. The puzzle of midterm loss. *Journal of Politics*, 50(4):1011–1029, 1988

January 25: Multiple Linear Regression
- Chatterjee and Hadi, Chapter 3.1-3.5
- Christopher H. Achen. Measuring representation. *American Journal of Political Science*, 22(3):475–510, 1978

January 30: Regression in Matrix Form
- Chatterjee and Hadi, Chapter 3 Appendix
- Gary King. Replication, replication. *PS: Political Science and Politics*, 28(3):444–452, 1995

February 1: Properties of OLS
- Chatterjee and Hadi, Chapter 3.6 and 4.1-4.2
- Patrick B. Johnston. Does decapitation work? assessing the effectiveness of leadership targeting in counterinsurgency campaigns. *International Security*, 36(4):47–79, 2012

February 6: Inference
- Chatterjee and Hadi, Chapter 3.7-3.9
- Kay Lehman Schlozman, Nancy Burns, and Sidney Verba. Gender and the pathways to participation: The role of resources. *Journal of Politics*, 56(4):963–990, 1994

February 8: More Inference
- Gary King. How not to lie with statistics: Avoiding common mistakes in quantitative political science. *American Journal of Political Science*, 30(3):666–687, 1986
- Gary King. Publication, publication. *PS: Political Science and Politics*, 39(1):119–125, 2006

February 11: Qualitative Variables
- Chatterjee and Hadi, Chapter 5.1-5.2 and 5.5-5.7
- Suzanne Mettler. Bringing the state back in to civic engagement: Policy feedback effects of the g.i. bill for world war ii veterans. *American Political Science Review*, 96(2):351–365, 2002

February 13: Interaction Terms
- Chatterjee and Hadi, Chapter 5.3-5.4
- Bear F. Braumoeller. Hypothesis testing and multiplicative interaction terms. *International Organization*, 58(4):807–820, 2004
- Thomas Brambor, William Roberts Clark, and Matt Golder. Understanding interaction models: Improving empirical analyses. *Political Analysis*, 14:63–82, 2006

February 20: Regression Diagnostics
- Chatterjee and Hadi, Chapter 4.3-4.5
- Sangit Chatterjee and Frederick Wiseman. Use of regression diagnostics in political science research. *American Journal of Political Science*, 27(3):601–613, 1983
- Robert W. Jackman. Political institutions and voter turnout in the industrial democracies. *American Political Science Review*, 81(2):405–423, 1987

February 22: Outliers and Influential Observations
- Chatterjee and Hadi, Chapter 4.8-4.11
- Robert W. Jackman. The politics of economic growth in the industrial democracies, 1987-80: Leftist strength or north sea oil? *Journal of Politics*, 49(1):242–256, 1987

February 27: Variable Transformation
- Chatterjee and Hadi, Chapter 6.1-6.4
- Kenneth N. Bickers and Robert M. Stein. The congressional pork barrel in a republican era. *Journal of Politics*, 62(4):1070–1086, 2000

March 1: Heteroskedasticity
- Chatterjee and Hadi, Chapter 6.5-6.10
- Jonathan N. Wand, Kenneth W. Shotts, Jasjeet S. Sekhon, Walter R. Mebane, Michael C. Herron, and Henry E. Brady. The butterfly did it: The aberrant vote for buchanan in palm beach county, florida. *American Political Science Review*, 95(4):793–810, 2001

March 6: Weighted Least Squares
- Chatterjee and Hadi, Chapter 7
- George W. Downs and David M. Rocke. Interpreting heteroscedasticity. *American Journal of Political Science*, 23(4):816–828, 1979

March 8: Autocorrelation
- Chatterjee and Hadi, Chapter 8
- Janet M. Box-Steffensmeier, Suzanna De Boef, and Tse-Min Lin. The dynamics of the partisan gender gap. *American Political Science Review*, 98(3):515–528, 2004

March 12-16: Spring Break

March 20: Time Series
- Nathaniel Beck and Jonathan N. Katz. What to do (and not to do) with time-series cross-section data. *American Political Science Review*, 89(3):634–647, 1995
- Suzanna De Boef and Luke Keele. Taking time seriously. *American Journal of Political Science*, 52(1):184–200, 2008

March 22: Multicollinearity
- Chatterjee and Hadi, Chapter 9
- Kees Aarts and Holli A. Semetko. The divided electorate: Media use and political involvement. *Journal of Politics*, 65(3):759–784, 2003

March 27: Measurement Error
- Michael Wallerstein. Industrial concentration, country size, and trade union membership. *American Political Science Review*, 85(3):941–953, 1991
- Lonna Rae Atkeson. Sure, i voted for the winner! overreport of the primary vote for the party nominee in the national election studies. *Political Behavior*, 21(3):197–215, 1999

March 29: Specification Error
- Chatterjee and Hadi, Chapter 11
- Gary King and Margaret E. Roberts. How robust standard errors expose methodological problems they do not fix, and what to do about it. *Political Analysis*, 23(2):159–179, 2014

April 3: Midterm

April 5: Introduction to Advanced Models

April 10: Logistic Regression
- Chatterjee and Hadi, Chapter 12.1-12.7
- Richard Nadeau and Harold W. Stanley. Class polarization in partisanship among native southern whites, 1952-90. *American Journal of Political Science*, 37(3):900–919, 1993
- Jaleh Dashti-Gibson, Patricia Davis, and Benjamin Radcliff. On the determinants of the success of economic sanctions: An empirical analysis. *American Journal of Political Science*, 41(2):608–618, 1997

April 12: Count Models
- Chatterjee and Hadi, Chapter 13.1-13.4
- Gary King. Statistical models for political science event counts: Bias in conventional procedures and evidence for the exponential poisson regression model. *American Journal of Political Science*, 32(3):838–863, 1988
- T.Y. Wang, William J. Dixon, Edward N. Muller, and Mitchell A. Seligson. Inequality and political violence revisited. *American Political Science Review*, 87(4):977–994, 1993

April 17: Causal Inference
- Alan Gerber. Estimating the effect of campaign spending on senate election outcomes using instrumental variables. *American Political Science Review*, 92(2):401–411, 1998
- Devin Caughey and Jasjeet S. Sekhon. Elections and the regression discontinuity design: Lessons from close u.s. house races, 1942-2008. *Political Analysis*, 19(4):385–408, 2011

April 19: More Advanced Models
- TBD

April 24: Presentations

April 26: Presentations

May 1: Presentations

May 3: Presentations