

POLITICAL SCIENCE 312, SPRING 2023

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OFFICE HOURS: TUESDAYS, 3-5PM

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1. BASIC COURSE INFORMATION

How racist is the average American, and what makes some more racist than others? Why can't Democrats and Republicans just get along? Does a country's colonial experience shape its future political and economic possibilities? These questions, and many more, have been addressed by statistical research in political science. This course explores quantitative/statistical research methods in the social sciences, with the goal of determining what makes a good descriptive or causal inference about politics. In this course, we will review the basics of statistical theory and quantitative research design, and then we will proceed to carefully examine in practical terms how to carry out and particularly analyze a quantitative study in political science.

Throughout the quarter, you will work on hands-on projects involving a research question and data set of your own choosing. Thus, you will learn how to evaluate other people's statistical work, but also how to design, execute, and interpret their own statistical models.

Course Objectives: By the end of the course, students will be expected to:

- Design, implement, execute, and interpret their own research project in statistical social science.
- Present results in a clear and interpretable way using graphs and tables, and also interpret and critique the graphs and tables used in other people's quantitative social science work.
- Explain the key assumptions behind common forms of statistical analysis in social science, and be able to perform common tests to check whether those assumptions are plausible in a given application.
- Identify the implications of statistical results for social science causal theories.
- Write papers clearly and concisely explaining statistical results.

Class Materials (Required): *The Fundamentals of Political Science Research, 3rd Edition*, by Paul M. Kellstedt and Guy D. Whitten. *Using R for Data Analysis in the Social Sciences*, by Quan Li.

Grading and Evaluation: Grades will be based on weekly hands-on assignments (10% each) and a final assignment (30%).

Research Study Participation Requirement: Students enrolled in this course are required to complete a research assignment that can include up to 4 hours of research study participation. These studies require that students set up an appointment to complete participation online. Students will learn how studies are conducted and will receive a synopsis at the conclusion of the quarter describing the study's goal, result, and relevance to the class. Students who prefer not to participate in research as subject may opt for an alternative that entails reading any one chapter about political science research and writing a five page reaction paper. The typical chapter is about 20 pages and thus reading it and writing a five page paper should take approximately four hours.

During the first or second week of the quarter, students will receive an e-mail asking them whether they prefer study participation or the alternative assignment. The e-mail will also include details on how to complete either requirement. Failure to complete the requirement during the quarter will result in an incomplete. Failure to complete the requirement during the following quarter will result in a failing grade for the class. Note that if you are enrolled in multiple classes that require participation, you only need to satisfy the requirement one time. Also, if you already completed the requirement in another course in a previous quarter, you are excused from the requirement.

Note: Any student requesting accommodations related to a disability or other condition is required to register with AccessibleNU (847-467-5530) and provide professors with an accommodation notification from AccessibleNU, preferably within the first two weeks of class. All information will remain confidential.

Class Time: Tuesdays and Thursdays, 2:00 to 3:20pm

Class Room: Kresge Centennial Hall 2-415

Office Hours: Tuesdays, 3-5pm, 316 Scott Hall

1.1. Academic Honesty. Each thing that you turn in for this course must, of course, reflect your original work. Any quotations from other people's work must be fully cited and documented. The same is true for paraphrases or for statistics or facts that are not general knowledge. Please do not hesitate to ask for additional details if you are confused about this assignment. The WCAS policy on academic integrity reads:

In a scholarly community like Northwestern, academic integrity is of the utmost importance. If you are guilty of dishonesty in academic work, you may receive a failing grade in the course and be suspended or permanently

excluded from the University. The brochure "Academic Integrity at Northwestern: A Basic Guide" details the types of offenses that constitute academic dishonesty and contains a thorough discussion of the proper citation of sources. You can get this brochure at the Office of Undergraduate Studies and Advising. A document on how instances of alleged academic dishonesty are handled is available online. The Undergraduate Catalog contains a non-exhaustive list of behaviors that violate standards of academic integrity. These include: cheating, plagiarism, fabrication, obtaining an unfair advantage, aiding and abetting dishonesty, falsification of records and official documents, and unauthorized access to computerized academic or administrative records or systems. Each of these is described in more detail in the catalog. One important type of academic dishonesty is plagiarism. Plagiarism includes more than just copying someone else's work. Northwestern's "Principles Regarding Academic Integrity" defines plagiarism as "submitting material that in part or whole is not entirely one's own work without attributing those same portions to their correct source." A Northwestern web page provides links to additional information on academic integrity, including information on relevant policies and on how to recognize and avoid violations of academic integrity in your own work. More tips on avoiding plagiarism are available from Northwestern's Writing Place. Sometimes students think that another student has acted in a way that is academically dishonest. In this situation you should consult with the Weinberg College Adviser.

2. COURSE SCHEDULE AND READINGS

This schedule is subject to changes (minor or major) depending on how long each topic actually takes us to cover, as well as on the needs of the class.

Thursday, March 28th: Finding Good Questions in Statistical Social Science

Kellstedt and Whitten, Chapters 1-2

The Effect, Chapters 1-2

Tuesday, April 2nd: What Is Causation, Anyway?

Kellstedt and Whitten, Chapter 3

The Effect, Chapters 5-7

Thursday, April 4th: Finding or Creating Statistical Data

Kellstedt and Whitten, Chapters 4-5

Tuesday, April 9th: Getting Started with R

Li, Chapters 1-2

Thursday, April 11th: Good Description

Kellstedt and Whitten, Chapter 6

The Effect, Chapters 3-4

Tuesday, April 16th: Quantitative Social Science in Practice I

The Effect, Chapters 18-21

Thursday, April 18th: Quantitative Social Science in Practice II

Christensen, Garret, Zenan Wang, Elizabeth Levy Paluck, Nicholas Swanson, David Birke, Edward Miguel, and Rebecca Littman. "Open science practices are on the rise: The state of social science (3S) survey." (2020). <https://escholarship.org/uc/item/0hx0207r>

Tuesday, April 23rd: Description and Significance Tests in R

Li, Chapters 3-4

Thursday, April 25th: Why is Regression Everywhere?

Kellstedt and Whitten, Chapter 9

The Effect, Chapters 12-13

Tuesday, April 30th: Regression in R

Li, Chapter 5

Thursday, May 2nd: Choosing Control Variables

Li, Mingxiang. 2021. "Uses and Abuses of Statistical Control Variables: Ruling out or Creating Alternative Explanations?" Journal of Business Research 126: 472-88. NOTE: some parts of this involve challenging algebra and assume some advanced statistical knowledge. Other parts explain things with graphs and paragraphs of text. Please try to read through the whole thing the best that you can; we will work through the ideas involved

Tuesday, May 7th: More Complicated Regressions

Kellstedt and Whitten, Chapters 11 and 12 (up to but not including the time-series stuff)

Thursday, May 9th: Crafting Good Regressions in Our Work

Kellstedt and Whitten, Chapter 10; Li, Chapter 6

Tuesday, May 14th: Regression and Non-Linearity

<http://statisticsbyjim.com/regression/difference-between-linear-nonlinear-regression-models/>

<http://statisticsbyjim.com/regression/choose-linear-nonlinear-regression/>

<http://statisticsbyjim.com/regression/curve-fitting-linear-nonlinear-regression/>

Thursday, May 16th: Interactions and Mediation

Tang, Min, and Narisong Huhe. 2020. "Parsing the Effect of the Internet on Regime Support in China." *Government and Opposition* 55(1): 130–46. doi: 10.1017/gov.2017.39

Tuesday, May 21st: Two Applied Examples

Daniel M Butler, Elin Naurin, and Patrik Öhberg, "Constituents Ask Female Legislators to do More." *The Journal of Politics*. Forthcoming. <https://doi.org/10.1086/719631>

Noam Lupu and Leonid Peisakhin, 2017, "The Legacy of Political Violence across Generations." *American Journal of Political Science* 61 (Oct.): 836-51.

Thursday, May 23rd: Workshop Time for Final Paper

Tuesday, May 28th: Workshop Time for Final Paper

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