Methods of Political Research

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"Science is a way of trying not to fool yourself. The first principle is that you must not fool yourself, and you are the easiest person to fool." – Richard Feynman

"I can calculate the motion of heavenly bodies, but not the madness of people." – Isaac Newton

Course Description

Over 200 years ago, Claude Henri de Saint-Simon bewailed the methodological state of political research, saying: "hitherto, the method of the sciences of observation has not been introduced into political questions; every man has imported his point of view, method of reasoning and judging, and hence there is not yet any precision in the answers, or universality in the results. The time has come when this infancy of the science should cease..."[1] Humans are natural pattern-seekers prone to cognitive biases. Without the rigor of scientific methods, researchers can fall into the same trap identified by Saint-Simon: an inability to generalize and replicate findings. The subjects of political science are extremely complex, multifaceted, and perhaps more difficult to predict compared to those of the physical sciences. However, the application of the scientific methods and carefully developed research tools have allowed political scientists to calculate, at least to some extent, the "madness of people" and guide future decisions and responses in political contexts.

In this course, you will be introduced to the methods and tools political scientists use to study political phenomena. Research approaches are often categorized as quantitative (testing theory with numerical measures and statistical techniques) and qualitative (complex and holistic considerations of phenomena using natural settings). While each approach has its own strengths and limitations, when integrated they depict a clearer understanding of the political world. Guided by this mixed-method research perspective, we will survey both qualitative and quantitative methods.

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[1] Quoted in Thiele, L. P. (1997). *Thinking Politics: Perspectives in Ancient, Modern, and Postmodern Political Theory.* Chatham House, NJ: Chatham House Publishers, 9.

By the end of the term, you will be conversant in the basic concepts, tools, and statistics that support many political science research designs. You will also be better able to read and understand complex qualitative and quantitative political science research. Finally, you should emerge from this course equipped to produce your own original research.

You are expected to read the entire syllabus at the beginning of the term. The syllabus should be referenced regularly throughout the term. Read it and plan ahead.

Required Texts and Software

Kellstedt, Paul. M. and Guy D. Whitten. 2018. *The Fundamentals of Political Science Research.* 3rd edition. NY: Cambridge University Press. Kellstedt, P. M. and Whitten, G. D. (2018). *The Fundamentals of Political Science Research, 3rd Edition.* Cambridge University Press, New York
- Abbreviated as *K&W* in the Course Schedule.
- Make sure to purchase the *third* edition.
- Bring the text to every class.
- Other assigned readings will come from a variety of scholarly sources and research institutions and will be available on Moodle.

R-Manual: Introduction to R and Labs for POSC 230
- This is a simple tutorial that will introduce you to the statistical software that you will use to analyze data for your assignments and final project.
- Complete the assigned readings before each class.
- We will work on the in-class activities during the lab portion of class.
- The R-manual will be available on Moodle.

Required Software
- In this class, you will learn to manage and analyze data using a statistical program and language called R. Most R users run R through a separate user interface in which they manage R. For this class, we will be using RStudio, which I have found to be a relatively user friendly R editor, while preserving the flexibility and power of R programming.
- **Getting R**: https://www.r-project.org/ – Go to download, choose a download site/mirror, select download appropriate for your OS (Mac, Windows, or Linux).
- **Getting R Studio**: https://www.rstudio.com/products/rstudio/download/#download – Download the open-source desktop version that associates with your OS.

Course Objectives

In this course you will be given the basic tools of causal logic, research design, and data analysis that are used in political science research but are also widely applicable across multiple fields of knowledge and inquiry.

By the end of this course you will be able to:
- Formulate novel and testable research questions, find data to answer the question, and conduct appropriate analyses to test particular hypotheses.
- Navigate, comprehend, and critically evaluate published political science research findings and methods.
- Think logically about complex causal relationships.
- Comprehend, interpret, and communicate basic statistical output, tables, and graphics.
- Critically evaluate the strengths, weaknesses, and underlying assumptions of various research approaches, designs, and analyses.
- Collect, clean, and run basic analysis on data using statistical software.

Course Requirements and Expectations

- This course assumes you have completed one of the following prerequisites: Mathematics 115, 215, 245, 275 or AP Statistics (score of 4 or 5).
- POSC 230 tends to be very challenging for most students. You will be expected to concurrently learn about the broader concepts and theories of research and the nitty-gritty details of statistical software, data collection, and data analysis. The abstract and concrete nature of the course is exciting and engaging, but it will also require your full investment.
- This course incorporates mathematics, but is applied in its focus so math will be primarily used to clarify concepts communicate complex ideas efficiently and precisely. This course often will use mathematical notation to represent causal relationships. You will need to make basic arithmetic calculations.
- The best advice I can give anyone on how to succeed in this course is to complete the prepared readings, come to class everyday, and to complete the assignments as early as possible. Start thinking about and working on your final paper project on the first day of the term!

Grading and Assignments

Class Preparation, Attendance, and Participation		10%	
Weekly Assignments		30%	
Research Question and Hypothesis	3%		(Tue., Sept. 24)
Introduction, Literature Review, and Theory	5%		(Tue., Oct. 1)
Data, Measures, and Research Design	5%		(Tue., Oct. 8)
Data Description and Visualization	5%		(Tue., Oct. 22)
Basic Statistical Analysis	5%		(Tue., Oct. 29)
Complex Analysis and Diagnostics	5%		(Tue., Nov. 5)
Poster and Abstract	2%		(Tue., Nov. 12)
Final Paper		20%	(Tue., Nov. 19)
Midterm		20%	(Tue., Oct. 15th)
Final		20%	(Sun., Nov. 24)
Total		**100%**	

Class Preparation, Attendance, and Participation - 10%

Attendance is mandatory. Classes will contain in-class activities and discussions designed to teach you important concepts and skills. You are expected to come to class on time and regularly. If you need to miss class because of an emergency or illness, please send me an email before class starts. A pattern of unexcused absences will negatively impact your participation grade.

Number of Unexcused Absences	Penalty
2	Participation grade lowered by 5 points
3	Participation grade lowered by 10 percentage points
4	Participation grade lowered by 20 percentage points
5	Participation grade = 0
6	Automatic F for the class

If you do miss a class, you should first contact another student for notes before coming to see me during office hours.

Research methods are best learned through hands on experience. Accordingly, in addition to the class readings, you are expected to complete lab readings before class that will build toward an in-class lab assignment. All lab readings and in-class lab assignments can be found in the R-manual. These in-class assignments are designed to be completed within an approximately 45 minute time period. These assignments are designed help you practice the methods which you will then apply to your own research project in the weekly assignment that you turn in. As such, it is designed to be collaborative, and we will take advantage of the classroom to highlight and share how different people have approached and answered the in-class group assignments.

You will submit your in-class lab work at the end of each class via Moodle. These will have a very quick grading scale (1 = acceptable, 0 = unacceptable) that will be counted toward your attendance and participation grade. In-class assignments will be marked as unacceptable if you

fail to turn in an in-class assignment, the code does not run when I check it, or if the assignment is incomprehensible and contains many errors. An unacceptable lab grade lowers your participation score by 2 percentage points.

For the R in-class assignments, we will use pair programming. One of you will be the "driver", and the other will observe and give suggestions. You should be able to finish these in-class, but there may occasionally be times that you are not able to do so and may need to work on them outside of class. Both team members must individually submit the assignment on Moodle (to ensure you both have a copy of the assignment for your own records and study needs). If you miss class, you are responsible for completing the in-class assignment by yourself (you will not have a team member to help you). In-class assignments must be turned in by 7:00 p.m. of the same day they were assigned in class.

Weekly Assignments - 30%

- On the **Tuesday of each week at 7:00 p.m.** you will have an assignment due (with the exception of Tuesday October 15th when the Midterm is scheduled and Tuesday November 19th when you will be turning in your final paper). These weekly assignments build toward or relate to your final research paper.
- As tempting as it may be to turn in an assignment late, this strategy almost always fails given the fast pace of the term and regularity of assignments. The assignments are designed to help you tackle a large project by breaking it down into smaller, more manageable components. That said, the final paper should NOT simply cut and paste the separate assignments into one paper. There should be considerable revision, expansion, and refinement of the rough draft components completed within individual assignments.
- Full assignment details will be posted on Moodle.

Final Paper - 20%

Your work in the course will culminate in a final research paper in which you use and present quantitative data. The final paper will be between 15 and 20 double spaced pages (not including title page and bibliography). Detailed instructions and a grading rubric for this assignment can be found on Moodle.

Midterm - 20%

DATE: Tuesday, October 15th from 8:15-10:00 in Weitz 235

The exam will include materials covered up to an including Lecture 8: Data Visualization. Only basic calculators will be allowed for exams.

Final - 20%

DATE: Sunday, November 24th from 7:00-9:30 p.m. in Weitz 235

The exam will cover the second half (everything covered after the midterm) of the course. Only basic calculators will be allowed for exams.

Course Policies

Grading Policies

A	93 or higher
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	Below 60

Late Work

Assignments are due by 7:00 p.m. on the deadline date indicated in the assignment. All written work should be submitted electronically on Moodle in pdf format (you can work in Word or another program, just print/save the final document to a pdf). Note that Moodle time stamps identify the minute of submission, so be sure to give yourself enough time and don't try to cut things too close. Any work submitted late (even by a minute) will face an automatic deduction of 4 percentage points (roughly equivalent to 1/3 letter grade) per 24 hours past the deadline. For example, if a 89% (B+) paper was submitted 1 minute late, it is automatically deducted to 85% (B). If the the paper was submitted 24 hours late, the grade will be reduced by 6 points to 81% (B-), etc. Unless there are campus-wide issues, technological difficulties do not excuse late work. Always backup your work. I highly recommend storing your files on Dropbox. Do not expect any grace period with online submissions.

Extensions

Being able to reliably meet deadlines is a very useful skill. Simply having a lot of work or having a schedule conflict is not grounds for an extension. Take the time at the beginning of the term and build a clear calendar of your respective deadlines and then plan ahead. If you have a conflicting event, find a way to get your assignment done in advance. Prioritize your learning. In the case of an emergency or serious conflict, I ask that you reach out to your student dean and have them contact me, and we work to find an appropriate accommodation.

Because I understand the difficulties of juggling schedules and the fast pace of the Carleton term, I will allow you to have a 24-hour extension for only ONE assignment (does not apply to the final project or exams).

Grade Complaints/Concerns

I will not receive grade complaints if more than one week has passed after the assignment has been returned to you. Before I review your grade you must first:

- Wait 24 hours (Technical problem dealing with errors in score calculations can be sent immediately).
- Schedule a time to meet with me to discuss your grade.
- Submit a formal appeal via email that clearly identifies content in the assignment and the reasons why you think your grade should be changed. Be clear that it is the an appeal in the subject heading. These appeals should refer to specific things in the assignment, and not to vague reasons like "I worked really hard."

The second grade, whether higher or lower, will become your grade on the assignment.

Electronics in Class Policy

Given the nature of this class, **I require you to bring your own laptop to class** to complete in-class lab activities. If you do not have a personal laptop, consider applying to Carleton's Laptop Loaner Program or please speak to Prof. Melanie Freeze. I expect you to be responsible in your use of electronic equipment: please avoid visiting social networking sites, or otherwise browsing the internet on sites unrelated to the course. I would also recommend you read through the discussion (including comments), *Computers in the Classroom*, to think about the possible pros and cons of using computers in a classroom setting. Individuals who abuse this privilege will find their participation grade reduced. Please turn off all cell phones during class.

Most calculations can be worked on in your head and on paper, but you may bring a basic calculator (addition, subtraction, multiplication, division, square root) to class and exams. R can complete these basic calculations as well, so you can use it for in-class assignments, but only basic calculators will be allowed for exams.

Academic Honesty

You are expected to abide by fundamental standards of academic honesty. A discussion of plagiarism can be found at: https://apps.carleton.edu/campus/doc/integrity/. All work is expected to be your own. Cheating, plagiarism (using someone else's words or ideas without properly citing them), and all forms of academic misconduct will not be tolerated and will be strictly handled according to university policy. If you are uncertain, cite your sources!

Accommodations for Students with Disabilities

Carleton College is committed to providing equitable access to learning opportunities for all students. The Disability Services office (Henry House, 107 Union Street) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations. If you have, or think you may have, a disability (e.g., mental health, attentional, learning, autism spectrum disorders, chronic health, traumatic brain injury and concussions, vision, hearing, mobility, or speech impairments), please contact disability@carleton.edu or call Jan Foley, Student Accessibility Specialist (x4464) or Chris Dallager, Director of Disability Services (x5250) to arrange a confidential discussion regarding equitable access and reasonable accommodations.

You can learn more about other academic support available at:

https://apps.carleton.edu/campus/asc/syllabusstatements/speaking/

Course Prefect

This course has a prefect, Ruby Vozza, whose email address is vozzar@carleton.edu. The Prefect Program offers optional collaborative learning sessions for participating classes. Prefect sessions review course concepts and often focus on critical thinking and problem-solving exercises centered on the course material. Scheduled outside of class time, they are led by trained student leaders who have received the department's or professor's stamp of approval. All the sessions are free and open to all students enrolled in the class. Our course prefect(s) will use email or Moodle to inform everyone in the class about upcoming sessions (where, when, topics, etc.).

Resources

Library Resources
- POSC 230 Course Guide: https://gouldguides.carleton.edu/posc230
- Data and Statistics Database: https://gouldguides.carleton.edu/az.php?t=21735
- The Quantitative Resource (QR) Center: https://twitter.com/CarletonQR - The QR Center is in East Wing Libe (4th floor). This is a new area for students to work on assignments for their Quantitative Reasoning Encounter (QRE) courses and others that involve quantitative reasoning. This space is open for you to study or work together any time the Libe is open, and staff or peer help is often available, no appointment necessary.

R Resources (If you ever get stuck in R, Google the problem first.)
- https://www.rstudio.com/online-learning/:Rstudio Online Learning
- https://www.rstudio.com/resources/cheatsheets/: RStudio has produced several visually pleasing and very useful "cheat sheets"
- https://r4ds.had.co.nz/: *R for Data Science* introduces how to visualization, transforming, tiding, and importing data using the efficient language of the tidyverse() package
- http://www.cookbook-r.com/: *Cookbook for R* produced by Winston Chang has excellent, well organized, and clearly discussed examples of various **R** code
- https://www.r-bloggers.com/: a great place to search for examples of code to help you problem solve your specific data questions
- http://cran.r-project.org/doc/manuals/R-intro.html: the **R** manual that is distributed with the base **R** software
- https://stats.idre.ucla.edu/r/: **R** Help from the Institute for Digital Research and Education at UCLA
- https://www.statmethods.net/index.html: Quick-R
- https://stackoverflow.com/questions/tagged/r: Stackoverflow
- http://dwoll.de/rexrepos/: R Examples Repository
- http://go.carleton.edu/lynda: Carleton subscribes to on-line course materials Lynda Videos. There are a few useful introductions to R and R Studio.
- https://itunes.apple.com/us/course/data-literacy-data-visualization/id693097601: Data Literacy and Data Visualization Lectures

Other Resources
- Evidence in Governance and Politics
- American Political Science Review Dataverse

Course Schedule

Lecture 1, Tues. Sept. 17: What is Political Science?

REQUIRED READING

- *K&W* chapter 1

Lecture 2, Thurs. Sept. 19: Research Questions, Causality, and Hypotheses

REQUIRED READING

- *K&W* chapters 2-3

ASSIGNMENTS

- *In-class Assignment*: #1 Causal Claims & Statistics Primer

Lecture 3, Tues. Sept. 24: Literature Review

REQUIRED READING

- Zuckerman, E. W. (2008). Tips to article-writers.
- Johnson, J. B., Reynolds, H. T., and Mycoff, J. D. (2016). *Political Science Research Methods, 8th Edition*, chapter 3: Beginning the Resarch Process: Identifying a Research Topic, Developing Research Questions, and Reviewing Literature, pages 74–102. Sage, Los Angeles.
- R-Manual Chapter 1 (Introduction)

RECOMMENDED READING

- Recommended: Belcher, W. L. (2009). *Writing your Journal Article in 12 Weeks: A Guide to Academic Publishing Success*, chapter 5: Reviewing the Related Literature, pages 139–169. Sage, Los Angeles.

ASSIGNMENTS

- *In-class Assignment*: #2 Literature Review Analysis & Search
- *Weekly Assignment*: Research Question and Hypothesis (Submit via Moodle by 7pm)

Lecture 4, Thurs. Sept. 26: Research Design – Quantitative and Data Wrangling

REQUIRED READING

- *K&W* chapter 4
- R-Manual Chapter 2 (Importing Data)

ASSIGNMENTS

- *In-class Assignment*: #3 Setting working directory, open Data and create R-scripts

Lecture 5, Tues. Oct. 1: Research Design – Qualitative

REQUIRED READING

- Qualitative vs. Quantitative Research at https://political-science.iresearchnet.com/qualitative-vs-quantitative-research/
- R-Manual Chapter 3 (Data Management)

RECOMMENDED READING

- Van Evera, S. (1997). *Guide to Methods for Students of Political Science*, chapter 2: What are Case Studies? How should they be Performed?, pages 49–88. Cornell University Press, Ithica
- Brians, C. L., Willnat, L., Manheim, J. B., and Rich, R. C. (2011). *Empirical Political Analysis: Quantitative and Qualitative Research Methods.* Longman, Boston, chapters 19 and 21.

ASSIGNMENTS

- *In-class Assignment*: #4 Merge and Clean Data
- *Weekly Assignment*: Introduction, Literature Review, and Theory (Submit via Moodle by 7pm)

Lecture 6, Thurs. Oct. 3: Concepts and Measurement

REQUIRED READING

- *K&W* chapter 5
- R-Manual Chapter 4 (Describing your Data)

ASSIGNMENTS

- *In-class Assignment*: #5 Summary statistics and One-way tables

Lecture 7, Tues. Oct. 8: Data Exploration – Descriptive Statistics and Basic Statistical Inference

REQUIRED READING

- *K&W* chapters 6-7
- R-Manual Chapter 5 (Data Visualization)

ASSIGNMENTS

- *In-class Assignment*: #6 Bivariate Tables and Graphs
- *Weekly Assignment*: Data, Measures, and Research Design

Lecture 8, Thurs. Oct. 10: Data Exploration – Visualization and Continued Foundations of Statistics

REQUIRED READING

- Wickham, H. (2010). A layered grammar of graphics. *Journal of Computational and Graphical Statistics*, 19(1):3–28, Accessed at http://vita.had.co.nz/papers/layered-grammar.pdf.
- Data Visualization in Political and Social Sciences: https://arxiv.org/ftp/arxiv/papers/1008/1008.1188.pdf
- optional: Gelman, A., Kastellec, J. P., and Ghitza, Y. (2009). *Beautiful Data: The Stories Behind Elegant Data Solutions*, chapter 19: Beautiful Political Data, pages 323–333. O'Reilly

ASSIGNMENTS

- *In-class Assignment*: #7 Bivariate Tables and Graphs continued & Midterm Review

Lecture 9, Tues. Oct. 15: Midterm

The midterm is in-class and closed-book. You may bring a basic calculator.

Lecture 10, Thurs. Oct. 17: Bivariate Hypothesis Testing

REQUIRED READING

- *K&W* chapter 8
- R-Manual Chapter 6 (Confidence Intervals, T-tests, and Tabular Statistics)

ASSIGNMENTS

- *In-class Assignment*: #8 T-tests and chi-squared hypothesis tests

Lecture 11, Tues. Oct. 22: Simple Ordinary Least Squares (OLS) Regression – Interpretation and Assumptions

REQUIRED READING

- *K&W* chapter 9
- R-Manual Chapter 7 (Continuous Bivariate Relationships and Statistics)

ASSIGNMENTS

- *In-class Assignment*: #9 Correlations and Simple, Two-variable Regression
- *Weekly Assignment*: Data Description and Visualization

Lecture 12, Thurs. Oct. 24: Multiple Regression and Model Assumptions, Specification, and Functional Form

REQUIRED READING

- *K&W* chapter 10-11
- R-Manual Chapter 8 (Multiple Regression)

ASSIGNMENTS

- *In-class Assignment*: #10 Multiple Regression

Lecture 13, Tues. Oct. 29: Logistic Regression

REQUIRED READING

- *K&W* chapter 12, pp. 273-281
- R-Manual Chapter 9 (Logistic Regression)

ASSIGNMENTS

- *In-class Assignment*: #11 Logistic Regression
- *Weekly Assignment*: Basic Statistical Analysis

Lecture 14, Thurs. Oct. 31: Diagnostics, Model Comparison, and Communicating Results – Part I

REQUIRED READING

- *K&W* chapter 11
- R-Manual Chapter 10 (Regression Diagnostics and Dealing with Problems)

ASSIGNMENTS

- *In-class Assignment*: #12 Regression Diagnostics

Lecture 15, Tues. Nov. 5: Diagnostics, Model Comparison, and Communicating Results – Part II

REQUIRED READING

- R-Manual Chapter 11 (Model Comparison and Communicating Results)

ASSIGNMENTS

- *In-class Assignment*: #13 Model Comparison and Communicating Results
- *Weekly Assignment*: Complex Statistical Analysis and Diagnosis

Lecture 16, Thurs. Nov. 7: Introduction to Advanced Topics and Replication

REQUIRED READING

- King, G. (2006). Publication, publication. *PS: Political Science & Politics*, 39(1):119–125.
- *K&W* chapter 12, pp. 282-298

ASSIGNMENTS

- *In-class Assignment*: Comps brainstorming

Lecture 17, Tues. Nov. 12: Qualitative/Quantitative Debate and the Mixed-Method Approach

REQUIRED READING

- Niedzwiecki, S. and Nunnally, D. (2017). Mixed-methods research in the study of welfare states. *PS: Political Science & Politics*, 50(4):1028–1031.
- Cyr, J. (2017). The unique utility of focus groups for mixed-methods research. *PS: Political Science & Politics*, 50(4):1038–1042.
- Barnes, J. and Weller, N. (2017). Case studies and analytic transparency in causal-oriented mixed-methods research. *PS: Political Science & Politics*, 50(4):1019–1022

ASSIGNMENTS

- *In-class Assignment*: Research Presentations
- *Weekly Assignment*: Poster and Abstract

Lecture 18, Thurs. Nov. 14: Ethics and IRB

REQUIRED READING

- Fujii, L. A. (2012). Research ethics 101: Dilemmas and responsibilities. *PS: Political Science & Politics*, 45(4):717–723.
- The Belmont Report at https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/index.html

ASSIGNMENTS

- *In-class Assignment*: Research Presentations

Lecture 19, Tues. Nov. 19: Review

ASSIGNMENTS

- *In-class*: Review for Final
- *Weekly Assignment*: Final Paper Due