

Poli 281: Data in Politics I

Instructor: Rachel Porter

Email: rachsur@live.unc.edu

Office Hours: Monday and Wednesday, 10:00 - 11:30

Office Location: Hamilton 303

Classroom: Gardner, 307

1 COURSE DESCRIPTION

This course is designed to achieve three objectives: (1) introduce you to research and quantitative analysis in political science, (2) help you become critical consumers of quantitative analysis used in political and policy-oriented reporting, and (3) give you the ability to answer questions of social scientific importance using data. Throughout the course, we'll discuss the complexities of generating good research designs, starting with how to ask interesting questions and how to measure concepts of interest to social scientists. We'll discuss the challenges and limitations of gathering good data to test these theories as well as various statistical tools that can be used to evaluate our theories. Throughout the course, we'll use what we've learned to think critically about the use and abuse of data by analysts, reporters, politicians, and policy advocates. As such, not only will you be learning to do your own analysis this semester, but also learning to evaluate such information when it's presented in the media.

The target audience for this course is undergraduate students with interest in the social sciences (not only Political Science), who want to use quantitative approaches to solve important problems, develop marketable analytical skills. This course fulfills the Quantitative Intensive (QI) requirement and counts as a research methods course for completing the Political Science major. It is a prerequisite for Poli 381: Data in Politics II which will be offered in future semesters.

REQUIRED TEXT

There is one required book for this course, available in the UNC Bookstore. We rely heavily on this textbook so it is essential that you buy it.

- Imai, Kosuke. 2017. *Quantitative Social Science: An Introduction*. Princeton: Princeton University Press.

SOFTWARE

Much of the hands-on work we will do in this class requires us to use computers, so I ask that you bring your laptops to class each day. Specifically, we will make use of the R statistical computing environment to analyze data and create graphics over the course of the semester. RStudio is a popular editor that allows you to open, edit, and save R text files, making it much easier to work with R. I will use RStudio to demonstrate in class, and I recommend you download and use it as well. To access these programs:

- **R:** Download precompiled binary distributions at <http://cran.us.r-project.org>
- **RStudio:** Download RStudio Desktop at <http://www.rstudio.com/products/rstudio>

SUGGESTED MATERIALS & ADDITIONAL RESOURCES

The textbook has extensive online materials for learning to use R. There are also a number of free supplemental resources available through UNC that offer assistance:

- <http://qss.princeton.press/student-resources-for-quantitative-social-science>
- Monogan III, James E. 2015. *Political Analysis Using R*. New York: Springer.
- R Open Labs: <http://ropenlabs.web.unc.edu>

Additional help may be found with the Odum Institutes statistical consultants at the Research Hub on the second floor of Davis Library from 9am to 6pm, Monday through Friday.

CHANGES TO THE SYLLABUS

I reserve the right to make changes to this syllabus at any time. If changes are made, students will be informed through email and verbally in class, and a new syllabus document will be posted on Sakai.

2 GRADING & COURSE REQUIREMENTS

Your grade for the course will be determined by performance in five areas: class participation, problem sets, DataCamp exercises, exams, and a critical analysis project.

GRADING

Final grades for the course will be based on the following scale. I reserve the right to make adjustments to individual grades based on overall performance in the course and/or extenuating circumstances. There will be no extra credit provided.

- | | | | |
|-------------|-------------|-------------|------------------|
| • A: 93-100 | • B: 83-86 | • C: 73-76 | • D+: 67-69 |
| • A-: 90-92 | • B-: 80-82 | • C: 73-76 | • D-: 60-62 |
| • B+: 87-89 | • C+: 77-79 | • C-: 70-72 | • F: 59 or below |

COURSE GRADE BREAKDOWN

The proportion of each assignment as part of your overall grade is as follows:

- Participation and Assigned Work: 15%
- Problem Sets: 25%
- Exams: 30%
 - Exam One: 10%
 - Exam Two: 20%
- Critical Analysis Project: 30%
 - Proposal: 5%
 - Preliminary Analysis: 5%
 - Presentation: 5%
 - Paper: 15%

IN CLASS PARTICIPATION & ASSIGNED WORK

Class time will be divided between lecture and in-class activities. The way you are going to learn best, especially when it comes to working with statistical software, is through practice. Active involvement in activities is absolutely crucial to success in this class not to mention, an easy way to boost your participation grade (and thus your overall grade). We will be doing a lot of in-class work, both individually and in groups. While attendance is not graded directly, absences will hurt your grade as you cannot earn participation points if you are not in class. If you know you are going to be absent for an excused reason, email me before class and give me any documentation I need to excuse you (i.e. doctor's notes, University's notes, etc.). When your absence is excused, you can make up the in-class work for credit. When your absence is unexcused, you cannot make the in-class work up and you will receive a zero.

PROBLEM SETS

Homework assignments will be assigned throughout the semester. The problem sets will be posted to Sakai, and due electronically on Sakai before the start of class on the due date. Late homework will be subject to a 10% penalty each additional day it is late. Late homework will no longer be accepted after the answer key is posted to Sakai.

CRITICAL ANALYSIS PROJECT

The research project is a primary focus of this course and, as such, makes up just under a third of the overall grade. This project will allow you to directly apply the lessons from this course to a political issue or question that you care about. For the project, you will be assigned to a group of 4-6 students (depending on class size). Your group will work together to select a relevant political issue or question, theorize about some factors that might explain that issue or help answer the question, choose a (provided) data set appropriate for the question, and analyze the data to see whether your expectations were supported. Each member of the group will receive *approximately* the same grade on all parts of the research project; I expect each member, in turn, to make an equal contribution throughout the process. You will be asked to evaluate your group members and yourself at each stage of the process and the evaluations provided will have an impact on your grade. The project and overall distribution of points are divided into four parts:

- **Project Proposal (5%):** Each group must turn in a two-page, double-spaced paper proposal by October 9th. This proposal should include a brief description of the issue or question about public opinion you plan to examine. Make sure to address why this topic is interesting to you and/or important within political science. This proposal should include an initial description of your research question, theory, and hypotheses.
- **Preliminary Analysis (5%):** Each group must turn in a preliminary data analysis, which includes the key statistics used to test your hypotheses, by November 11th. This assignment, totaling approximately two or three double-spaced pages, requires a brief description of the data used, a brief explanation of the statistical methods you used, the relevant statistical outputs you computed, and an indication of whether and why the outputs support or oppose your paper's hypotheses.
- **Presentation (5%):** At the end of the semester, each group will give a PowerPoint presentation about its research on December 7th. Each presentation should be approximately 12-15 minutes, and time will be left for questions and answers after each group presents.
- **Paper (15%):** The final research paper is due on December 7th before presentations begin. This paper should be approximately 10 pages, double-spaced, not counting any tables, figures, or the bibliography.

EXAMS (30%)

There will be two exams; the first worth 10% and the second worth 20% of your final grade. The first will be on October 11th and the second will be on November 25th. Note that this is not the final exam slot. We will be using the final exam slot for group presentations. The format of each exam will be discussed in class before the exam.

UNEXCUSED ABSENCES AND EXAMS

You are required to be present for all scheduled exams. The only allowable exception to this policy is a documented emergency. If at all possible you should contact the instructor before the exam to discuss the emergency, provide documentation, and schedule the make-up.

3 EXPECTATIONS

COMMUNICATION

I am very happy to meet with students outside of class time. Whether it be to discuss concerns about the course, remediation with the material, or simply to engage further with the topic, please feel free to stop by Hamilton 303 during my office hours. If you are unable to meet during my office hours, which are listed at the top of this syllabus, please email me to set up a time to talk. Email is the best mode of communication with which to reach me. While I do my best to respond to emails as quickly and thoroughly as possible, please expect a response within 24 hours and plan accordingly.

Office hours are an important resource that should be utilized to improve understanding of materials or ask more personalized questions. Office hours before an exam will be held at regular times and, unless noted by me, no additional office hours will be held - so plan accordingly. University Policy stipulates that no grades can be sent over email. *After I have graded and returned your assignments, there is a twenty-four hour moratorium before I will answer questions about that assignment.*

TECHNOLOGY USE

The use of cell phones or other mobile communication devices is prohibited during this class, without exception. Laptops, on the other hand, are required. We are going to be doing a lot of work on the computer, especially with statistical programming software. Please email or come talk to me if you do not have access to a laptop and we will find a solution. Please bring your laptop to every class.

STUDENTS WITH DISABILITIES

Students with disabilities needing academic accommodation should (1) contact the office of Learning Disabilities at UNC: <http://www.unc.edu/depts/lds/index.html> and (2) bring a letter to me indicating the need for accommodation and what type during the first week of class.

ACADEMIC INTEGRITY

According to UNC's Instrument of Student Judicial Governance, It shall be the responsibility of every student enrolled at the University of North Carolina to support the principles of academic integrity and to refrain from all forms of academic dishonesty. Failure to abide by this policy may result in punitive action taken against the offending students. Consult the UNC Writing Centers handout on plagiarism (<http://writingcenter.unc.edu/handouts/plagiarism/>) to learn more on how to avoid academic dishonesty.

Programming is a skill that takes time and practice to develop. Whenever you encounter a new problem, you will have to grapple with it and reach an understanding of what it is asking before you can reach a solution. Discussing the problem with other people is permitted and even encouraged. When it comes time to actually write your code to solve the problem, all work must be your own. Do not copy anyone else's code, and do not share your code with others. Identifying plagiarized code is surprisingly easy, even after renaming variables or rearranging individual pieces of code. Some in-class work and the critical analysis project is collaborative, and collaborative writing of code is permitted. **All collaborative assignments will be clearly identified.**

HONOR CODE

All students participating in the class are assumed to be familiar with and adhering to the UNC Honor Code. I treat violations of the Honor Code seriously. More information is available at <http://instrument.unc.edu>.

COLLABORATIVE GROUP MEMBERSHIP

As explained above, students will work on the research project, including the presentation and final paper, as a group. Though time will be given in class for group members to work together on the various sections of the research project, you will still need to devote a substantial amount of time to the group project outside of class. I expect all members of the group to contribute equally to the project, and each component of the project should reflect contributions from each group member. In other words, do not simply divide up the components of the project among the members of the group. While collaborative work poses some challenges, the benefits you will gain from learning how to work together successfully as a team will serve you well in all facets of your life, from the classes you take in the future to the career you pursue after graduation.

When it comes to group work, two problems often occur: (1) one member of the group dominates the project, or (2) some members of the group “free ride” by relying on other group members to do their work for them. I will try my best to prevent both, by regularly checking in with groups about the status of their projects. If problems within the group do arise, I encourage you first to discuss them openly and honestly among yourselves to see if some resolution can be found. If problems persist, please see me.

4 SCHEDULE

Readings and assignments are due the date of class listed.

Date	Class Topic	Readings & Assignments
08/21	Introduction & Syllabus Day	Download R & R Studio
08/23	Working with R: The Basics	Data Camp Introduction to R: Chapters 1-3
08/26	Working with R: The Basics	In-Class Exercise
08/28	Working with Data in R	Data Camp Introduction to R: Chapters 4-6
08/30	Working with Data in R	In-Class Exercise
09/04	Analyzing Data in R	In-Class Assignment Problem Set #1 Released
09/06	Analyzing Data in R	
09/09	Intermediate R: Loops	Data Camp Intermediate R: Chapters 1-2 Problem Set #1 Due Problem Set #2 Released
09/11	Intermediate R: Functions	Data Camp Intermediate R: Chapters 3-4
09/13	Intermediate R: Review	In-Class Exercise
09/16	Introduction to Causality I	Bertrand & Mullainathan pgs. 991-997 Imai pg. 32-48 Problem Set #2 Due Problem Set #3 Released
09/18	Introduction to Causality II	Imai pgs. 49-63 Yeh et al. 2018 and NPR parachute article
09/20	Group Projects	
09/23	Data Visualization & Descriptive Statistics	Imai pgs. 63-88 Problem Set #3 Due
09/25	Visualizing Data in R	In-Class Exercise
09/27	Cleaning Data in R	Data Camp Cleaning Data in R: Chapters 1-4
09/30	Measurement: Surveys and Sampling	Imai pgs. 88-116 Cohn 2016 NYT article
10/02	Research Ethics	Denizet-Lewis 2016 (LaCour/Green/Brookman/Kalla NYT article)
10/04	Applying Concepts	In-Class Exercise Problem Set #4 Released
10/07	Group Project Work Day	
10/09	Review & Catch-Up	Turn in Project Proposals
10/11	Exam # 1	
10/14	Prediction	Imai pp. 123-160
10/16	Applying Concepts	In-Class Exercise Problem Set #4 Due
10/21	Linear Regression I	DataCamp Corr. and Regression: Chapters 1-5
10/23	Linear Regression II	Imai pgs. 161-170

Continued on next page

Calendar – continued from previous page

Date	Class Topic	Readings & Assignments
10/25	Multiple Regression	Reingold & Smith 2012 In-Class Exercise Problem Set # 5 Released
10/28	Multiple Regression	Carnes & Lupu 2014 In-Class Exercise
10/30	Catch-Up & Finish Multiple Regression	
11/01	Bringing It All Together	In-Class Assignment
11/04	Interaction Effects	Imai pgs. 171-182 Hansen & Treul 2015
11/06	Introduction to Probability I	Imai pp. 242-265
11/08	Introduction to Probability II	Imai pp. 277-306
11/11	Applying Concepts	In-Class Exercise Preliminary Analysis Due
11/13	Uncertainty I	Imai pp. 314-369
11/15	Uncertainty II	Preliminary Analysis Returned
11/18	Group Work Day	
11/20	Group Work Day	
11/22	Review	
11/25	Exam #2	
12/02	Group Work Day	
12/04	Group Work Day	
Final Paper & Presentation Due Saturday December 7th at 8:00 A.M.		