GOV 2080
Quantitative Analysis in Political Science

Spring 2020
Kanbar 107 (class)
VAC North 304 (lab)
Tuesday and Thursday: 1:15-2:40pm
Friday Lab: 10:40-11:35am

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Office Hours:
Monday, 9-10am
Friday, 2-3pm
And by appointment

This course examines the use of empirical methods to study political phenomena. It is designed to help you think like a social scientist and to give you the tools to investigate interesting and important social/political phenomena. Research begins with a puzzle and a question. What makes a puzzle worth investigating? What makes a particular research project worth pursuing? Ask first, who cares? After surmounting this hurdle (a hard enough challenge), it is imperative that we think first about process. How is my puzzle generated? For example, what process generates turnout rates on Election Day? Do voters make rational decisions about the costs and benefits of voting? Or do they care more about civic and democratic responsibilities? Once we hypothesize a process, we must then consider its implications— what should we observe if I'm right? This should motivate us to collect data and leverage it against our expectations. Does the evidence support my claims? How might I be wrong? Finally, we must write it all down, and in a way that is digestible to our readers.

We begin the semester with one major goal of social science, <u>descriptive inference</u>. This is not description as in the collection and discussion of facts. Descriptive inference is the use of a sample of data to explain a larger social or political phenomenon. Polls are the most common example of a descriptive inference. We will discuss and review the use of polls in American politics, with a specific emphasis on good and bad practices in the polling profession. We follow this with a consideration of <u>causal inference</u>. That is, how do we identify relationships between variables? How are we sure that one variable has a causal effect on another? When are those relationships significant? This raises important questions about how to collect and code our data.

Ultimately, the best way to think like a social scientist is to act like one. As such, your assignments will push you to practice the tools we will read about and discuss in class. This course satisfies the MCSR distribution requirement. To that effect, we cover issues of data collection (which can be simple but challenging) and data analysis (which can be as basic a cross-tabulation and as complex as statistical inference tests).

Course Requirements

There are five major components to your grade:

1. **Three short assignments** (15 points; each worth 5 points)—these are 3 page papers (double-spaced). Paper topics and instructions are provided below on each due date.

2. **Four problem sets** (40 points; each worth 10 points)—these will cover topics from the Pollock and Edwards text. Due dates are listed on the syllabus. Two will be completed in class and two will be take home assignments.
   *On the third and fourth problem sets, you may work together on problem sets, if and only if it is a collaborative process. Should you find yourself relying on your partner to "carry" you through the exercise, you are not collaborating. Even if working together in some capacity, *you are responsible for writing up and turning in work separately*. You must also list on the top of the problem sets your collaborators. Any evidence that your work is not your own (e.g., copying significant portions of a write-up) will result in a referral to the College's Judicial Board.

3. **Regular quizzes** (10 points)— there is a possibility of a quiz on any class day that will deal with the readings for that specific day.

4. **Class participation** (10 points)—this includes attendance and class participation (especially in the design and implementation of our course-sponsored poll—more on that later). Attendance is required, and I will take regular note of who is and who is not in class. I understand that people get sick, have doctor's appointments, and so on, but I will only grant excused absences in rare circumstances. Your grade here will also reflect work completed as lab assignments (see section below).

5. **Final paper** (25 points)— This paper sets out a research design for a major research project. You will state what your question is; what your theory and hypotheses are; what data you would use to test your empirical expectations; and what data analysis tools you would employ. You should also consider how you would collect the data and what challenges that might pose for the project. You will also provide a brief literature review of prior work in your issue area. You **may** write this paper with another student. Groups of no more than 2 are allowed, however. If working alone, the paper should be about 10-pages (double-spaced). If you write with another student, the paper must be about 15 pages (double-spaced) and should provide a more expansive literature review and data collection section.

Readings

There are two books for this course, and a number of outside articles. All of the outside readings can be accessed through Blackboard.

1. *The Essentials of Political Analysis*, 6th edition, by Philip Pollock III and Barry Edwards. Sage.

2. *Method and Meaning in Polls and Surveys*, by Howard Schuman. Harvard University Press.

Lab Sessions

Every Friday. See schedule at the end of the syllabus. The focus of the labs will be to develop software and math skills. There may be occasional short readings for the lab sessions, and we will use various lab sessions to work also on aspects related to the problems sets. There will be small assignments on various lab sessions. ***Completion of these will be assessed as part of your participation grade***.

Other Issues

1. I expect all students to abide by the Bowdoin Academic Honor Code, which can be accessed online at: https://www.bowdoin.edu/dean-of-students/student-handbook/the-academic-honor-code-and-social-code.html. If you have any concerns or questions about how to cite work appropriately, please consult a reference librarian or me.

1. If you have chosen to take the class as Credit/D/F, I will only grant a Credit grade if the student has completed all of the work for the class.

2. I am not allowing the use of laptops during class time (Tuesdays and Thursdays). Old-fashioned notebooks and pens/pencils are recommended for note taking.

Class Schedule

January 21—Introductions and Expectations

January 23—Understanding Concepts
- Pollock and Edwards, Chapters 1

January 28—Understanding Concepts, cont.
- Pollock and Edwards, Chapters 2

January 30—An Introduction to Polls
- Schuman, Preface, Introduction, and Chapters 1-2

Short Exercise 1, due Jan. 30 (5 points): Define the concept of "intellectual fearlessness" using the template in Chapter 1 of Pollock and Edwards. Discuss how you might operationalize and therefore measure the concept. What type of variable would it be, given the discussion in Chapter 2? Conclude with a brief discussion of the challenges of defining this concept.

February 4— Descriptive Inference
- John Gerring. 2012. "Mere Description," *British Journal of Political Science*. 42(4): 721-746.

February 6— Descriptive Inference, cont.
- *Class exercise*

Short Exercise 2, due Feb. 6 (5 points): Consider something that you might want to "describe." What type of description would it be? Consult again Figure 1 in Gerring. Why is describing it important? What challenges might you expect to encounter in doing the description? Good papers will demonstrate that your proposed analysis has considered the advice of Gerring's article.

February 11—Understanding Polls
- Schuman, Chapter 3-4

February 13— Understanding Polls, cont.
- Schuman, Chapter 5-6 and Conclusion

February 18— Conducting a Poll
- Reading TBA

February 20— Conducting a Poll, cont.
- Reading TBA

Short Exercise 3, due Feb. 20 (5 points): Design two survey questions for our class poll. Note: "Why?" follow-up questions are not counted as separate questions for this assignment, but as components of one question. Why did you select these topics and questions? Defend the form and content of your questions by making reference to the arguments in Schuman. For example, why did you choose open or closed forms? Are there concerns about question order and wording? Good papers will demonstrate that your questions are designed in part with the advice of Schuman's book.

February 25— Analyzing a Poll
- Pollock and Edwards, Chapter 6, pp.167-183

February 27— Analyzing a Poll, cont.
- Pollock and Edwards, Chapter 6, pp.183-195
- *Review for Problem Set 1*

March 3— Analyzing a Poll, cont.
- Pollock and Edwards, Chapter 7, pp.199-215
- *Review for Problem Set 1, cont.*

March 5— **Problem Set 1** (10 points)

March 9-20—Spring Break!

March 24— Analyzing a Poll, cont.
- Pollock and Edwards, Chapter 7, pp.215-234
- *Review for Problem Set 2*

March 26— Introducing Causal Inference
- Reading TBA

March 31— **Problem Set 2** (10 points)

April 2— Framing Hypotheses
- Pollock and Edwards, Chapter 3

April 7— Experiments and Controlled Comparisons
- Pollock and Edwards, Chapter 4-5

April 9— Experiments and Controlled Comparisons, cont.
- Reading TBA

April 14— Bivariate Regression
- Pollock and Edwards, Chapter 8, pp.239-249

April 16— Bivariate Regression, cont.
- Pollock and Edwards, Chapter 8, pp.249-257

Problem Set 3, due April 17 (10 points)

April 21— Math Review/Final Paper Discussion

April 23— Bivariate and Multivariate Regression
- Pollock and Edwards, Chapter 8, pp.257-272.

April 28— Bivariate and Multivariate Regression, cont.
- Reading TBA

April 30— Bivariate and Multivariate Regression, cont.
- Reading TBA

Problem Set 4, due May 1 (10 points)

May 5— Logistic regression
- Pollock and Edwards, Chapter 9

Final Paper, due Saturday, May 16, 4:30pm

Lab Schedule (we will start promptly at 10:40am)

January 24—Summary statistics in Excel/Sharing our experience with data

January 31—Excel, Introduction to R

February 7—Reading data, changing directories, and summary statistics in R

February 14—R scripts, manipulating data (aggregating, recoding)

February 21— R scripts, statistical analysis (comparing means and trends across groups)

February 28— Statistical analysis (difference of means, Chi-square, etc)

March 6—no lab

March 27—R graphics

April 3— R graphics

April 10— Statistical analysis (regression)

April 17— Statistical analysis (regression)

April 24—Math review

May 1—Ethics in research