PS218: Understanding Political Numbers  
Fall 2013

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Office Hours: Tuesdays 9:30-11:30am and by appointment.

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About the Course:

Formally, this course will teach you how to understand quantitative analysis, how to develop a question that you can answer, how to collect and analyze the data and how to present your conclusions to others.

There are basically two components to the course. The first is the theoretical component. Why are numbers and data important to political analysis? What is the proper way to ask a research question? How do we find and use political data to tell a story and support an argument? The second component is technical. How do we employ statistical computing and graphics software to clearly present our data and findings to others?

In essence, this course is about more than just numbers. It is a skills course. It is about learning how to ask (and answer) the right questions about politics. It is about presenting those answers clearly to an audience. And, in accomplishing these other tasks, it is about getting and “A” on every term paper you write from here on out.

Computing Requirements:

You need to have a computer you can use and on which you can install R and R Studio. Both are free and can be run on both Windows and Mac operating systems. They are available for download at www.r-project.org and www.rstudio.com respectively.

We DO NOT assume any prior knowledge of statistics or R. While we do expect some knowledge of basic computing tasks (creating folders, etc.), this course is designed to provide you all the necessary instruction in the programs you will be using.

Text:

A text on creating graphics in R is required for the class. This is R Graphs Cookbook by Hrishi V. Mittal. I highly recommend purchasing the e-version of the book,
although a traditional version is available for those who prefer. While we won’t be assigning many readings specifically from this text, I have found it to be the most straightforward text for those beginning with graphics in R.

Our substantive reading for the course will come in the form of short articles, book chapters and online readings. These will be posted on Learn@UW and/or sent to you via e-mail.

Additional Resources

I call the following “additional resources” rather than “recommended reading” since I won’t directly be referencing any of these during the course. The following, however, are several books that I found helpful when learning R for the first time.

*Getting Started with R Studio* by John Verzani  
*Learning R Studio for R Statistical Computing* by van der Loo and de Jong  
*A Beginner’s Guide to R* by Zuur, Ieno and Meesters

There are a number of other texts and websites that I can recommend for the more advanced user. If you find yourself in this category, just ask.

**Components of the Grade:**

First, we will have a number of exercises designed to demonstrate you’ve learned the basic skills of programming in R. These will be brief, with the goal that you learn how to read data, or make a chart, or conduct an analysis. You will submit your R code and output but generally won’t have to write much beyond that. These will be graded as 1 (satisfactory), .5 (turned in but incorrect or incomplete) and 0 (not turned in). Because we will be discussing solutions to these exercises in class the day they are due, late work WILL NOT be accepted.

Second, you will submit two more in depth analyses of topics that we cover in class. This will be in the form of short essays and several accompanying graphics that illustrate your analysis, created using R. The goal here is to develop your ability to “tell a story with data”, the fundamental objective of the class. These will be graded on the conventional A-F scale.

At the end of the semester, you will do a final paper, similar to the above but longer (12 pages, excluding graphics) and with more detailed analysis. For this project you will choose the subject and be responsible for collecting the data. This essay will also graded on an A-F scale.

Since this is the most important component of your grade for the course, we will ask you to submit 2 “drafts” in the final weeks of the semester. The first will be a short (2-3 pages) paper proposal in which you identify your research question and plan for your paper. The second will be the submission of the data that you will use in the analysis section of your final paper.
There will be *NO* final exam.

**Grading:**

Your final grade will be computed based on

- Exercises 20%
- 2 short essays 20%
- 2 paper “drafts” 20%
- Final paper 40%

**A Note on Attendance:**

A number of sessions of this course will be conducted in a workshop/lab format (as opposed to strict lecturing). Learning **R** is like learning a new language; it takes lots of hands on practice. As such, attendance is extraordinarily important. While I won’t often take formal attendance, it is my experience that it is extraordinarily difficult to pass this course without regularly showing up. Additionally, since a large component of this course involves computing, it is perfectly acceptable to use laptops during lecture. That said, if your laptop is open I expect you to be working in **R Studio** not your social media accounts.

***Students affiliated with the McBurney Center should see me about any necessary accommodations.***
Course Outline

Below you will find the tentative outline for the semester. Be aware that these topics and dates are subject to change. This is especially important since we will take this course at your pace (i.e. if we need to spend more time on certain skills, we will). As such, consult Learn@UW, your e-mail and/or in class announcements for up to date changes.

Week 1
Tuesday, September 3—Intro and Syllabus
Thursday, September 5—Thinking about Political Numbers

Week 2
Tuesday, September 10—Introduction to R and R Studio
Thursday, September 12—Elections and Numbers

Week 3
Tuesday, September 17—Histograms in R
Thursday, September 19—More on Histograms and Box Plots in R

   **Exercise 1 distributed**

Week 4
Tuesday, September 24—World Health Data
Thursday, September 26—Scatter Plots in R

   **Exercise 1 due**

Week 5
Tuesday, October 1—More on Scatter Plots

   **Exercise 2 distributed**

   Thursday, October 3—Simple linear models in R

Week 6
Tuesday, October 8—Alabama Election and Plotting Linear Models

   **Exercise 3 distributed**

   Thursday, October 10—Data Collection and Management

   **Exercise 2 due**

Week 7
Tuesday, October 15—Linear Models
Thursday, October 17—Non-Linear Relationships (Quadratic and Logarithmic)

   **Essay 1 distributed**

Week 8
Tuesday, October 22—More on Non-Linear Models

   **Exercise 3 due**

   Thursday, October 24—Plotting Data Over Time in R
Week 9
Tuesday, October 29—Black Death

**Essay 1 due**

Thursday, October 31— Presidential Approval

Week 10
Tuesday, November 5—Multivariate Linear Models in R
Thursday, November 7— Multivariate Models and Forecasting

**Essay 2 distributed**

Week 11
Tuesday, November 12—Suicide Bombings
Thursday, November 14—Nuclear Weapons

Week 12
Tuesday, November 19—What are Good Research Questions??
Thursday, November 21— Where do I find data??

**Essay 2 due**

Week 13
Tuesday, November 26—Discuss Paper Topics

**Paper Proposal due**

Thursday, November 28—NO CLASS, THANKSGIVING

Week 14
Tuesday, December 3—Writing your paper…what we expect
Thursday, December 5—Advanced topics in R

**Data Set due**

Week 15
Tuesday, December 10—Advanced topics in R
Thursday, December 12—Advanced topics in R

Sunday, December 15—**Final Paper Due**