Political Methodology I  
POLS 205  
Fall 2019  
Syllabus

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Office: Ellison 3715  
Office Hours: R 11:00 a.m.-1:00 p.m. or by appointment  
Class meeting time: T R 2:00-3:25 p.m.  
Class location: Ellison 3814

1 Course Objectives

This course is designed to provide an introduction to research design and especially to quantitative political methodology for political science graduate students. We will cover core issues of research design and basic probability and statistics through multivariate linear regression from a political science perspective. This means two things: that emphasis is placed upon political science applications, and that what we will study reflects the dominant philosophies and practices of the discipline. For example, with quantitative methods very dominant in the discipline today, even if you yourself will not conduct quantitative (“large-n”) studies, you should be familiar enough with the basic techniques to be able to understand and critique them. This course accordingly aims to start you along the paths to becoming both a consumer and producer of quantitative research. It also serves as the gatekeeper to more advanced methods courses offered in the department, particularly to PS 206, which offers a more in-depth look at linear regression and its close relations. Since I not surprisingly subscribe to the well-known axiom that you only learn data analysis by doing, we will get our hands dirty from day one. Accordingly, we will learn one of the major statistical software packages used by political scientists, R, along the way. Where possible, we will also read journal articles that illustrate or otherwise illuminate the conceptual and practical issues on the table.

2 Course and Contact Information

The syllabus, assignments, and other handouts are all available from the course GauchoSpace site. Announcements will be posted to the site; it should be your first port of call if you’re unsure about what’s happening when and where.

The best way to contact me is either to come to my office hours or to send me an e-mail.

- **Office Hours:** I encourage you to stop by early in the quarter so that you can get to know me and vice versa. Don’t, in other words, feel shy about coming to see me, whether you just want to chat about the weather or have more substantive course-related issues to discuss.

- **E-mail:** I will respond within twenty-four hours to e-mails that I receive during business hours on Mondays through Thursdays (I rarely check e-mail in the evenings). I will try to answer e-mails received prior to mid-afternoon on Friday by 3:00 p.m. but may not manage to respond until Monday.
3 Prerequisites

I assume only high school algebra and a tolerance for dirty hands. Regarding the former, getting your head around the material and making your statistical software package do what you want it to do can sometimes be both frustrating and time consuming. I can only encourage you to keep trying. With persistence (and sometimes a little help), you will eventually figure it out. Trust me on this—I’ve been there, too. Regarding the latter, calculus is helpful since some of the material we cover makes use of it. However, don’t panic: it is not necessary. I will show you some math from time to time in lecture, but this will be solely to provide you with motivating, behind-the-scenes intuition. You are not expected to be able to reproduce it in problem sets.

4 Requirements

Course requirements are six assignments. These assignments will be equally weighed except for the final assignment, which will be weighed three times as much as the others and due at the end of finals week (serving somewhat as a final project).

For some assignments, I will ask you to work alone. However, for most assignments (i.e., unless I tell you otherwise), you may work with others. In fact, I strongly encourage you to form small study groups. Yet even when you work with others, the write-ups must be your own. This means that you can talk through how to solve a problem with someone else, but you must then on your own (in another room, later in the day, in silence) put the solution down on paper. No late assignments will be accepted without documentation. Extensions should be arranged at least twenty-four hours in advance.

5 Required Reading Materials

There is one required text for the course:

Gujarati, Damodar N. 2005. Essentials of Econometrics. 3rd Edition. Boston: Irwin/McGraw-Hill. Also acceptable but less preferred is the 4th edition from 2010. (henceforth, Gujarati). Equivalent chapters from the newer Gujarati 4th edition (2010) are shown in brackets. The third edition is obviously an older edition; the bookstore cannot obtain used copies. However, it can be ordered quickly from many used book vendors online, such as Amazon. That is accordingly the route that I recommend you take. If you are having trouble obtaining a copy, please come and talk to me about alternatives. Even older editions (such as the 2nd edition from 1999) will also work; just ask me about equivalent chapters. I have also arranged for the library to put a copy of the 4th edition on reserve.

Journal articles and other reading materials that appear on the syllabus can be obtained from the course GauchoSpace site.

6 Recommended Reading Materials

6.1 Research Design

There are many excellent texts on research design available nowadays. Here are a few general texts that I recommend:


### 6.2 Quantitative Methods

Relative to the required texts, the following are of an approximately equivalent to slightly lower level of difficulty:


The Freedman et al. text, in particular, will be very useful for those with little background in statistics: it is a source of elementary, clear, and almost completely math-free discussions of class topics. I will include optional references to relevant chapters of this text (abbreviated as FPP in the schedule below) for those who would like to do additional, math-free “background” reading on some topics. The text by Achen is a cheap, very accessible, and short overview of linear regression
that is packed with a plethora of useful tidbits, one written by one of the greatest contemporary political methodologists. I highly recommend it.

For those desiring a more mathematically rigorous but still accessible approach to the material (i.e., some calculus and linear algebra), the following texts are good places to turn. The first, in particular, is widely regarded as one of the best textbooks on statistics ever written: from personal experience, I can say that it is well worth every penny.


Textbooks such as these are usually not cheap, but you will find yourself consulting the good ones throughout your academic career. Hence, view them as investments.

### 7 Computing

All but the first of the assignments will require you to make use of a statistical software package to actually implement the methods that we discuss in class. You are allowed to use either STATA or R, the two most popular packages amongst political methodologists. However, in class, we will only work with R.

R is the open source version of the commercial software program S-PLUS. (In the parlance of its developers, R is “not unlike” S-PLUS.) textttR, on the other hand, is completely free and can be easily downloaded from www.r-project.org. Instructions for downloading and installing it will be provided to you as part of the second assignment.
8 Schedule

The tentative schedule for the course follows. Some topics will take more than a week, others less.

Introduction
Gujarati, Chapter 1 [Chapter 1].

Key Principles of Research Design: Measurement, Causality, and Designs

Data Gathering: Survey Methods, Participant Observation, and Content Analysis

Probability and Probability Distributions
Gujarati, Chapter 2 [Appendix A].
Optional: FPP, Chapters 13 and 14.

Descriptive Statistics and Data Visualization
Gujarati, Chapter 3 [Appendix B].
Optional: FPP, Chapters 3, 4 and 7–9.

Important Probability Distributions, Sampling, and Limit Theorems
Gujarati, Chapter 4 [Appendix C].
Optional: FPP, Chapters 16–19.

Statistical Inference: Estimation and Hypothesis Testing
Gujarati, Chapter 5 [Appendix D].
Optional: FPP, Chapters 26 and 29.
**Bivariate Linear Regression**  
Gujarati, Chapters 6 and 7 (7.2-7.8 only) [Chapters 2 and 3 (3.2-3.8 only)].


**Multivariate Linear Regression**  
Gujarati, Chapter 8 (NOT 8.2) [Chapter 4 (NOT 4.2)].