

Political Science 328
Advanced Methods of Political Analysis

Course Syllabus
Fall 1997
MWF 9:00-9:50 a.m. in 793 SWKT

Instructor: Jay Goodliffe
Office: 750 SWKT
Phone: 378-9136
e-mail: jay_goodliffe@byu.edu

Office Hours

I will hold office hours on Wednesday afternoons 2:00-4:00. I will also be available most other times. In addition, you can reach me by phone and/or e-mail. I encourage you to come by for any reason whatsoever.

Course Objectives

This course explores the fundamental concepts of research design and empirical analysis, with a heavy emphasis on statistics. It is based on concepts you have learned in PISc 200. (You should not enroll in this course if you have not already had PISc 200.)

This course is designed to help you:

1. Become an excellent consumer of quantitative arguments (particularly statistical arguments);
2. Become a competent regression analyst, able to utilize statistical techniques and quantitative data to support your own arguments;
3. Understand the concepts that form the foundation of statistics.

Approach

Given the small class size, this will not be an rigidly structured course. I welcome your input in determining what subjects we discuss, and how and when we cover it. There are some topics that we must cover, but other topics are not necessarily required.

Course Outline

The first part of the course will cover basic statistical concepts in qualitative language. We will use little math, and presume no prior knowledge of statistics. We will simply define and explain the terms that you are likely to encounter throughout the course (and beyond).

The second part of the course will discuss the statistical concepts of the first portion in quantitative language. This should not get too complicated, but the math is necessary to get used to the notation and formulations you will see. For this portion of the course, we will use math at the level of college algebra (*i.e.*, the college algebra taught in high school).

The final part of the course will cover regression analysis. There will be a series of assignments intended to help you understand the principles of regression. Then you will be able to evaluate many of the statistical models of other scholars, and formulate your own models. These skills will be vital in executing your research project.

Requirements

Midterm Exam on Part 1	10%
Midterm Exam on Part 2	10%
Weekly Assignments	30%
Review Essay on Herrnstein/Murray vs. Gould	15%
Research Project	25%
Class Participation	10%

Readings

There are three required books that are available for purchase at the bookstore:

Stephen Jay Gould. 1996. *The Mismeasure of Man*, revised and expanded. New York: Norton.

Damodar Gujarati. 1992. *Essentials of Econometrics*. New York: McGraw-Hill.

Richard J. Herrnstein and Charles Murray. 1994. *The Bell Curve: Intelligence and Class Structure in American Life*. New York: Free Press.

We will read the Gould and Herrnstein/Murray books in the beginning parts of the course to examine how statistics can be applied in social science arguments. (You are also required to write a review essay about these two books.) The Gujarati book is an excellent statistics textbook that we will use in the latter part of the course.

There are two additional statistical books. Although they are not required, they are also available for purchase at the bookstore. (I would be happy to recommend other texts if you find these inadequate.)

Larry Gonick & Woollcott Smith. 1993. *The Cartoon Guide to Statistics*. New York: HarperPerennial.

Peter Kennedy. 1992. *A Guide to Econometrics*, 3rd edition. Cambridge: MIT Press.

Although the title may discourage the serious reader, the Gonick & Smith book is an excellent introduction to statistics, particularly for those who find statistics dull and opaque. It also has the distinct advantage of being correct, even in the details (which is not always the case with such books). The Kennedy book has a different approach than most statistics texts: in each chapter it discusses a set of concepts qualitatively, then the same concepts quantitatively, and finally discusses the minutiae of those concepts.

There will be multiple other readings that I will copy and distribute. All readings should be read before class if at all possible to enhance the value of our discussions.

Course Schedule (tentative)

<u>Date</u>	<u>Topic</u>	<u>Chapter Readings (suggested readings by week)</u>
September 3	Introduction and Overview	H&M App. 1 (577-591) [G&S 1]
5	Distributions, Histograms	<i>suggested: SJG</i> 51-104
8	Measures of Central Tendency	
10	Measures of Spread	<i>suggested: SJG</i> 105-141; H&M 1-125
12	Probabilities	
15	Sampling	
17	Quantitative Inference	<i>suggested: SJG</i> 142-175; H&M 127-266
19	Factor Analysis	
22	Two-variable Regression Analysis	SJG 176-263
24	Multiple Regression Analysis	<i>suggested: SJG</i> 264-350; H&M 267-386
26	Descriptive Statistics	DG 2,3 [G&S 2,3,4,5,6; PK App. A]
29	Probabilities and Sampling	<i>suggested: SJG</i> 351-424; H&M 387-552
October 1	Quantitative Inference	DG 4 [G&S 7,8; PK 4]
3	Midterm Exam on Part 1	
6	Factor Analysis	
8	Factor Analysis (continued)	
10	Regression Analysis	DG 5 [G&S 11; PK 2]
13	Regression (continued)	
15	Regression (continued)	
17	Review Essay Due	
17	Assumptions of OLS	DG 6.1-6.4 [PK 3]
20	Assumptions (continued)	
22	Bivariate Regression Applications	DG 6.5-6.11
24	Midterm Exam on Part 2	
27	Multiple Regression Applications	DG 7
29	Time Series Applications	DG 14.2-14.3 [PK 16,17]
31	Functional Forms	DG 8
November 3	Dummy Independent Variables	DG 9 [PK 14]
5	Dummy Dependent Variables	DG 14.4-14.5 [PK 15]
7	Dummy Dependent (continued)	
10	Multicollinearity	DG 10 [PK 8.3]
12	Heteroskedasticity	DG 11 [PK 11]
14	Autocorrelation	DG 12 [PK 8.4]
17	Model Specification	DG 13 [PK 5,6]
19	Case Studies and Process Tracing	
21	Selection Bias	
24	Measurement Error	[PK 9.3]
26	Endogeneity	
28	Thanksgiving Break	
December 1	Project Presentations	
3	Project Presentations	
5	Project Presentations	
8	Project Presentations	
10	Project Presentations	