

POLITICAL SCIENCE 585: TECHNIQUES OF POLITICAL ANALYSIS

DERBY 0125, TUESDAY AND THURSDAY 9:30-11:18, WINTER 2008

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Welcome to Techniques of Political Analysis. This class will teach you to understand the research methods used by social scientists, like political scientists, sociologists and economists, among others. More specifically, we will explore the quantitative analysis of data in detail, with a focus on how these methods can help us answer questions about the social world scientifically. We will cover three major topics over the quarter: (1) the nature of science and research design, (2) the description of data, and (3) causal inferences. While this is a class that has statistics as its primary subject matter it is intended to be a class on the research process as a whole.

Course Goals: I expect that you will be able to do all of the following tasks upon successful completion of this course.

- (1) Formulate research questions and hypotheses.
- (2) Evaluate the validity of statistical claims.
- (3) Generate and interpret descriptive statistics.
- (4) Generate and interpret basic inferential statistics.
- (5) Think “scientifically” about social and political problems.
- (6) Apply the methods learned to real-world phenomena.

Course Objective (University Mandated):

This course satisfies the GEC quantitative and logical skills requirement, described by the University as follows:

Rationale: “Courses in quantitative and logical skills develop logical reasoning, including the ability to identify valid arguments, use

mathematical models, and draw conclusions based on quantitative language.”

Learning Objective: Data Analysis—“Students understand statistics and probability, comprehend mathematical methods needed to analyze statistical arguments, and recognize the importance of statistical ideas.”

Course Materials: I have ordered both of the required textbooks at Long’s and both are likely available at other campus bookstores. Feel free to purchase the books on-line as well.

Levin, Jack and James A. Fox. *Elementary Statistics in Social Research: The Essentials* (2nd edition). Allyn and Bacon. ISBN: 020548493X. This will be our textbook.

Pollock, Phillip H. III. *A Stata Companion to Political Analysis*. Washington, D.C.: CQ Press. ISBN: 0872893057. This will be our workbook.

I will also occasionally post required reading selections on the Carmen course website. These are denoted as “Articles” in the syllabus.

Hands-on analysis of data will be provided in the homework assignments. “Doing” is the best way of learning the material in this class. We will use a statistical software program called STATA 9.0 to complete homework assignments. You have access to this program on the lab computers whenever the lab is open for use. You may also purchase STATA from the University, but it is quite expensive and you will have ample time available in the lab to complete your assignments. Therefore, it is not necessary for you to purchase STATA unless you wish to have a copy for personal use.

You may also wish to have a calculator. One that can perform simple square-root functions should be sufficient. However, you certainly do not need one as you can perform all the necessary calculations in STATA.

Classroom Behavior: Because we are in a classroom with computers, I must ask that you not eat or drink in class. Also, please be sure to silence your cell phones before coming to class. If ringing cell phones become an issue, then I reserve the right to impose a small penalty on the final grade of those whose phones continue to ring.

Grading and Assignments: Your grade in this class will be comprised of 4 homework assignments, a midterm and a final.

-HOMEWORK: The four homework assignments will each be worth 10% of your grade, for a total of 40%. They will be based largely on the exercises in the Pollock workbook. The due dates for these homework assignments are provided on the syllabus and should be given to me in class on the date listed. I WILL NOT ACCEPT LATE HOMEWORK ASSIGNMENTS. If you anticipate not being in class on the day an assignment is due you should make arrangements to turn it in to me before it is due. I encourage you to work with one another to complete the assignments, but the final product that you turn in must be your work and only your work.

As noted, you will be required to use STATA to complete the homework assignments. I do not expect that you have any knowledge of STATA and I will teach you everything you will need to know to complete your assignments in class. We will work many examples with STATA and my hope is that you become quite comfortable with the program.

-MIDTERM: The midterm is worth 25% of your grade and will cover all of the material we have discussed up until February 5th.

-FINAL: The final exam is worth 35% of your grade and it will not be cumulative. I will test you over all of the material we cover after the midterm until the end of the class.

I will make special arrangements for students who must miss a test for very good reasons, but you must give me a note describing the reasons that you have to miss the test and must obtain my permission to do so prior to the test. If I give you permission to miss an exam, you must check with me on the first class day after the examination to find out the time for the makeup examination, and you must take the examination at that time. If you miss an examination without prior permission, ordinarily you will receive a score of zero on that examination. If you have very good reason for missing the examination without prior permission, I will allow you to take the makeup with a penalty of five points for each day after the exam before you notified me (including the examination day itself).

The grading scale is as follows and is based on the percentage of total available points earned:

A = 93% or greater
A- = 90-92%
B+ = 87-89%
B = 84-86%
B- = 80-83%
C+ = 77-79%
C = 74-76%
C- = 70-73%
D+ = 67-69%
D = 63-66%
D- = 60-62%
F = < 60%

Academic Honesty:

All of the work you do in this class must be your own. Cheating and plagiarism will not be tolerated. All cases of cheating and plagiarism will be handled according to university policies as outlined in the *Code of Student Conduct*.

Students with Disabilities:

If you need an accommodation based on the impact of a disability, you should contact me to arrange accommodations. I rely on the Office for Disability Services for assistance in verifying the need for accommodations and developing accommodation strategies. If you have not previously contacted the Office for Disability Services, I encourage you to do so.

Course Schedule:

NOTE THAT ALL LISTED READINGS AND ASSIGNMENTS ARE REQUIRED.

January 3rd: Class Introduction

January 8th: Philosophy of Science, Nature of Scientific Progress, Theories and Hypotheses

-Article: Hotz, Robert Lee (2007). "Most Science Studies Appear to be Tainted by Sloppy Analysis." *The Wall Street Journal*. 14 September 2007, p. B1.

-Article: Manheim et al. (pp. 15-32)

-Levin & Fox CH. 1 (pp. 1-4)

January 10th: No Class

January 15th: Operationalization, Conceptualization and Levels of Measurement

-Article: Manheim et al. (pp. 67-72)

-Levin & Fox CH. 1 (pp. 4-14)

Describing Data I: Graphs, Tables, and Cross-Tabulations

-Levin & Fox CH. 2

January 17th: Describing Data II: Measures of Central Tendency

-Article: Rosen, Peter A., and Rick L. Wilson (2007). "An Analysis of the Defense First Strategy in College Football Overtime Games." *Journal of Quantitative Analysis in Sports* 3 (2).

-Levin & Fox CH. 3

Homework 1 Due

January 22nd: Describing Data III: Measures of Variability

-Levin & Fox CH. 4

January 24th: Probability and the Normal Curve

-Levin & Fox CH. 5

January 29th: Samples and Hypothesis Testing I

-Levin & Fox CH. 6

January 31st: Samples and Hypothesis Testing II

- Article: Gill, Jeff (1999). "The Insignificance of Null Hypothesis Significance Testing." *Political Research Quarterly* 52 (3): 647-674.
- Levin & Fox CH. 6

Homework 2 Due

February 5th: **Midterm**

February 7th: Making Inferences I: Difference of Means Tests

-Levin & Fox CH. 7

February 12th: Making Inferences II: Analysis of Variance

-Levin & Fox CH. 8

February 14th: Making Inferences III: The Chi-Squared Test

-Levin & Fox CH. 9 (pp. 207-224)

February 19th: Making Inferences IV: Correlation

-Levin & Fox CH. 10

Homework 3 Due

February 21st: Regression Analysis I: Bivariate Regression

-Levin & Fox CH. 11

-Article: Pollock CH. 7 (pp. 157-168)

February 26th: Regression Analysis II: Multivariate Regression

- Article: Pollock CH. 7 (pp. 168-175)

February 28th: Regression Analysis III: Multivariate Regression

-Article: Pollock CH. 7 (pp. 168-175)

-Article: Lacina, Bethany (2006). "Explaining the Severity of Civil Wars."
Journal of Conflict Resolution 50 (2): pp. 276-289.

March 4th: Non-Quantitative Research Methods/Research Ethics

-Article: Manheim et al. (pp.322-328)

Homework 4 Due

March 6th: Course Review

Final, Monday, March 10th 9:30 am-11:18 am