METHODS AND STATISTICS IN POLITICAL SCIENCE POL 221

Spring 2006 Dr. Thornberry
Office: Chambers 2027 Ext. 2282
Tuesday and Thursday 10:00; 2:30

Scope and Purpose

The world of politics offers a nearly infinite array of interesting problems. Why did the Soviet Union collapse? What are the best predictors of political stability? Which groups support a particular political party or candidate and why? For these and many other questions, potential answers may be difficult to sort out. It is even harder to demonstrate conclusively that one of those answers is more "correct" than another. This course will help you think more carefully and systematically about political questions, their potential answers, and the types of evidence needed to evaluate those answers.

To encourage such careful, systematic thinking, the course focuses on the use of analytical frameworks and statistics. During the first part of the semester, we explore the logic of statistics, gradually introducing examples with real numbers. We examine how that logic can improve many types of non-quantitative analysis (i.e., research without "number crunching"), from historical analysis to single or comparative case studies. The statistical principles can help make this type of research more logical and systematic. However, the application of statistical principles to non-quantitative work is not universal and can be controversial; we will also discuss some of these controversies.

During the second part of the semester, we examine the same statistical principles in their more common context: quantitative analysis with many observations. With the growing availability of surveys and other large data sets, politicians and political scientists are increasingly turning to this type of analysis. We begin with a discussion of averages and then move to basic concepts of probability and hypothesis testing. We conclude with several weeks on correlation and regression, two of the most common types of statistical analysis. These topics often create fear in the minds of political science majors, particularly those who chose the major in order to avoid all contact with numbers! This course can alleviate such "stats anxiety." Students are NOT required to have an extensive background in math or calculus. Instead, they should understand basic math functions (addition, subtraction, multiplication, and division) and be willing to learn and apply additional math concepts. The most complicated math you will need to do is find a square root – something your calculator should do for you!

Mastery of the course concepts can benefit students in many ways. Here at Davidson, an understanding of statistical principles can help in other courses by making it easier to understand political science research presented in those courses. You can impress friends

and other professors by posing important questions about that research: Why were the particular cases chosen for analysis? Were these the best cases? Does the evidence presented persuasively support the author's argument? The concepts from this course can also make it easier for students to do their own research for seminar papers or honors theses. Finally, the course can prove helpful after graduation. In addition to developing their analytical and statistical abilities, students must improve their skills of written and verbal expression and learn the SPSS statistical computer program. After graduation, these skills can make a student more attractive to potential employers.

Thus, while you may not have come to college just hoping to take a Political Science course in methods and statistics, we trust that you will find it a useful part of your liberal arts education. All citizens should have at least a basic understanding of how to interpret statistical concepts. Complex political questions can often benefit from the type of analysis that we will do in this course. This course is required for the major, and we encourage students to take it as soon as possible after declaring.

Texts

Joel Best – Damned Lies and Statistics
James Carlson and Mark Hyde – Doing Empirical Political Research
Michael Lewis-Beck – Applied Regression
Phillip Shively – The Craft of Political Research

Some additional reading is available on electronic reserve. You will also need a calculator capable of computing a square root. Nothing fancy beyond that is necessary.

Class Attendance

Coming to class on a regular basis matters in most Davidson classes, but more than usual in this one. Do the reading, be in class, work on the problems, and you will be in great shape for the exams. Since the problems often depend on the material discussed in the previous class, taking good notes will help you a lot. Note that Davidson academic regulations call for failing grades to be given to any student who misses more than 25% of the scheduled classes.

Daily Problems

Throughout the semester there will be some daily homework problems suggested. Often, but not always, I will collect these assignments and grade them. Always do them. One advantage is that you will more easily discover what you do not understand as you try to apply the ideas we talk about in class. These should be ready to be handed in at the beginning of every class. Your final grade will include 5% based on these problems.

Problem Sets

There will be five problem sets due during the course of the semester. These are longer assignments that will take several days to complete. All work should be typed when possible, though equations may need to be written by hand. These are also due at the beginning of the class period for which they are assigned. Late papers will be penalized at the rate of 5 points per day. These will count 5% each or 25% of your final grade.

Honor Code

The Honor Code binds all work in the course. In accordance with the Honor Code, all paper assignments must provide appropriate citations for any sources or information included in the paper; failure to provide these citations is a violation of the Honor Code. If you have questions about the appropriate format for citations, make sure that you ask before turning in the paper. You can also visit the Campus Writing Center for additional assistance. If you have any questions about how to apply the Honor Code to work in this course, please do not hesitate to ask.

Studying in groups can be of immense help in a statistics course. I will provide some guidance in forming study groups. Discussing the problem sets in groups is not a violation of the Honor Code. Once you begin to write the answers, however, the work should be your own. Some assignments will be done in pairs and jointly graded. In all other cases you should do your own work.

Presentations

One skill that should always be a part of liberal arts is the ability to deliver an interesting oral presentation. As part of this course, you will be required to do a five -minute presentation illustrating a topic in the course. A hand-out prepared in consultation with our communication studies department will guide you in issues to consider. I will assign specific dates for your topic during the first week of class. This aspect will count 5% of your total grade.

You will also critique the presentation of several other students using the guidelines mentioned above. Your comments should be between 150 to 200 words long; email them to me within 48 hours of the presentation. I will edit them and then forward them to the student you are critiquing. You will be graded on the depth and perception of your critique. These will count 5% of your total grade.

Grades

In addition to the items listed above, there will be an in class mid-term and a self-scheduled final. The weights of these various factors are: 5 problem sets—5% each; 1 oral presentation – 5%; evaluations of presentations – 5%; homework – 5%; mid-term – 25%; final – 35%.

Late Work

Since we will often be discussing the homework and problem sets in class the session they are due, you will be severely penalized if the problem is handed in after that time. One letter grade for every late day is the penalty. The beginning of class is the time all work is due. If you are sick, contact me at once. Emailing me work is acceptable only with specific prior permission. I expect hard copy for all assignments.

Office Hours

My tentative office hours will be: MW 10-11:30; TR 9:30-10. Do not hesitate to come see me if you are having difficulty understanding problems. I will be able to arrange other hours to see you if these times do not fit your schedule. It does not help to say "I came by to see you but you weren't there." If you need to see me, arrange a time.

If you wish to contact me outside of office hours or class, emailing me is better than calling.

Accommodations for Students With Disabilities

Full accommodations are the legal right of students with all kinds of disabilities, whether learning disabilities or physical disabilities. I am happy to provide these accommodations. If you are a student with a learning disability documented by Davidson College who might need accommodations, please identify yourself to me within the first week or two of class, so that I can learn from you as early as possible how to best work with your learning style. Students with other disabilities are also encouraged to self-identify if there is any way in which I can make accommodations that will enhance your learning experience. All such discussions will be fully confidential unless you otherwise stipulate.

Course Outline

Date	Topic	Reading	Due Dates
Jan. 10	Introduction: Political Science	CH 1	
Jan. 12	What's Scientific about Politics?	CH 2	
Jan. 17	Frame a Question	CH 3 + 4	
Jan. 19	What are statistics?	Best Int,1-3	
Jan. 24	It's Just a Theory	S 1+2	
Jan. 26	We Already Knew That	CH 5 + 11; Best 4-6	Problem Set #1 due
Jan. 31	How Many Dimensions Are There?	S 3	
Feb. 2	Let's Be Accurate	S 4	
Feb. 7	Be More Precise	S 5; CH 7	
Feb. 9	What Caused That?	CH 6; S 6	Problem Set #2 due
Feb. 14	What's a Good Example	Putnam	
Feb. 16	Cases and Case Studies	CH 12; S 7; Mahoney and Goertz	
Feb. 21	**Midterm Review**		Review
Feb. 23	Hello Numbers: Introduction to SPSS	CH 8 + 10;	
Feb. 28/M 2	**Spring Break**		
Mar. 7	Means and Standard Deviations	CH 13;	
Mar. 9	Probability Theory; Z Scores		Problem Set #3
Mar. 14	Sampling Distribution, Standard Error	CH 9I	
Mar. 16	Confidence Intervals	CH 13 221-248	
Mar. 21	Hypothesis Testing	CH 17	
Mar. 23	Single Sample Means Test		Problem Set #4
Mar. 28	Representative Sample Testing		
March 30	T test: Means of Independent Samples	CH 14	
April 4	T test: Matched Pair Samples		
April 6	Chi Square; Ordinal Level Variables		

April 11	Correlation		
April 13	Regression Basics	CH 15	
April 18	**Easter Break**	L 9-19, 47-51	
April 20	Statistical Tests	L 20-25, 30-47, 51-53;	Problem Set #5
April 25	Multicollinearity; Multiple Variables	CH 16:L 56-63	
April 27	Predicted Values, Outliers, Dummy Variables	L 66-71	
May 2	Evaluations, Conclusions, Questions	CH 18	
May 4	Reading Day		