

POL 501  
Introductory Statistics for Public Policy  
Fall 2004  
Mondays 6-9 pm

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#### I. Overview:

The main purpose of this course is to teach student to understand the basics steps in the research process. We begin with an explanation of research design so that students can see how a research question may be answered. Once the framework for research is established the students will learn some basic statistics for describing variables and the relationships between variables. The second half of the course will spend a lot of time using the statistical software package MINITAB. Minitab will be made available free (for a dollar) to the students and will be an essential component to the course.

In conjunction with POL 502, this course will provide students with useful tools for engaging in empirical research in public policy and will help students understand literature that uses quantitative research. Students will learn how to think about theoretical problems in terms of statistical models. Much of this course and a great deal of POL 502 will involve learning statistical formulae and applying them using real world political data. To understand the routines we ask the computer to perform for us, a tolerance for algebra will be a necessity.

Attendance in this class is mandatory. Grades may be lowered at the instructor's discretion for students with excessive absences.

I will try to make as extensive use of the online Blackboard system as possible:

You can access class information on-line at: <http://blackboard.sunysb.edu> If you used Blackboard during the 2003-2004 Academic Year and/or Summer 2004, your login information (Username and Password) has not changed. If you have never used Stony Brook's Blackboard system, your initial password is your SOLAR ID# and your username is the same as your Stony Brook (sparky) username, which is generally your first initial and the first 7 letters of your last name.

For help or more information see:

<http://www.sinc.sunysb.edu/helpdesk/docs/blackboard/bbstudent.php> For problems logging in, go to the helpdesk in the Main Library SINC Site or the Union SINC Site, you can also call: 631-632-9602 or e-mail: [helpme@ic.sunysb.edu](mailto:helpme@ic.sunysb.edu)

Assignments, lectures, data sets, and power point presentations will be available at the site. Also, check for messages regarding class news such as possible snow days or other last minute changes or cancellations.

## II. Computer Work

A lot of the work in this class will focus on graphical and statistical use of data using MINITAB – a relatively easy but powerful software package. Using MINITAB is not an optional part of the course and copies will be made available to the students for use off campus. Students are encouraged to work together on homework and assignments that use MINITAB *but each assignment that is handed in must be unique.*

## III. Required and Recommended Texts

There are two required textbooks for this course.

They are:

R. Mark Sirkin: Statistics for the Social Sciences, 2<sup>nd</sup> Edition. 1999. Sage Publications.

Barbara Ryan and Brian Joiner: MINITAB Handbook, 5<sup>th</sup> Edition. 2005. Duxbury Press.

Additional readings from political science journals and online resources may be assigned through the course of the term.

## IV. Course Requirements

Homework Assignments:

Three assignments: 20% each. Due dates:

Assignment 1: October 11.

Assignment 2: November 8.

Assignment 3: November 29.

*Students are encouraged to help each other with assignments but each assignment must be an individual effort. Students handing in assignments that are too similar to each other will receive grades of 0.*

Mid-term examination: 20%. In class exam October 25.

Final exam: 20%. Take home exam due in class December 6.

All assignments are to be handed in at the beginning of the class session for which they are due. Details about each assignment will be discussed in class.

## V. Disability Policy

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631)632-6748. They will determine with you what accommodations are necessary and appropriate. All information and

documentation is confidential. Students requiring emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information, go to the following web site:  
<http://www.ehs.sunysb.edu/fire/disabilities/asp>

VI. Class Schedule and Readings (note: additional readings will be added)  
Reading assignments should be completed before the class for which they are assigned.  
We will try to keep to this schedule as closely as possible.

**WEEKLY TOPICS:**

**Week 1 Monday August 30<sup>th</sup>.**

Topic: Introduction to the Scientific Method and Research Questions

Reading: "Comparative Politics and the Comparative Method." Arend Lijphart. *American Political Science Review*. Volume 65. 1971.

Available online at <http://www.jstor.org/> or on Blackboard.

Sirkin, Chapter 1.

**Week 2 September 13**

Topic: Hypotheses, Theories & Models

Reading: Sirkin Chapters 1&2.

**Week 3 September 20**

Topic: Concepts, Variables & Levels of Analysis

Reading: Sirkin Chapter 3.

**Week 4 September 27**

Topic: Data and Introduction to MINITAB

Reading: Ryan and Joiner Chapter 1

**Week 5 October 4**

Topic: Data Management in MINITAB

Reading: Ryan and Joiner Chapters 2&3

**Week 6 October 11**

*Assignment 1 Due*

Topic: Graphs, Measures of Central Tendency and Dispersion

Reading: Sirkin Chapters 4&5, Ryan and Joiner Chapters 4&5.

**Week 7 October 18**

Topic: Contingency Tables and Hypothesis Testing

Reading: Sirkin Chapters 6&7.

**Week 8 October 25**

*Midterm Exam*

**Week 9 November 1**

Topic: Hypothesis Testing, Statistical Inference and Significance Tests  
Also, election eve forecasts.  
Reading: Sirkin Chapter 7.

**Week 10 November 8**

*Assignment 2 Due*

Topic: Probability Distributions and Bivariate Statistics I  
Reading: Sirkin Chapter 8, Ryan and Joiner Chapter 6.

**Week 11 November 15**

Topic: Bivariate Statistics II

Reading: Sirkin Chapter 9, Ryan and Joiner Chapter 9.

**Week 12 November 22**

Topic: Analysis of Variance

Reading: Sirkin Chapter 10, Ryan and Joiner Chapter 10.

**Week 13 November 29**

*Assignment 3 Due.*

*Final Take-home Exam handed out.*

Topic: Chi-Square and Correlation

Reading: Sirkin Chapter 12, Ryan and Joiner Chapters 11&12.

**Week 14 December 6**

*Final Exam Due.*

Topic: Discussion and Presentations

VII. Extras

This class requires a lot of work by the student. Missing classes or falling behind in the readings and homework assignments will severely limit student success. **It is extremely difficult to cram for statistics**, so be sure to keep up.

Also, three hours of statistics at a time can be tedious! Having read the information before class will make class time much easier.

Written work must be submitted on time. Late work receives a penalty of one letter grade for every day it is late beginning the day it is due.