METHODS OF POLITICAL ANALYSIS
University of South Carolina

POLI 502   Professor Brad T. Gomez
Fall, 2005   Office: Gambrell 345
Office Hours, Tuesday and Thursday   E-mail: gomezbt@sc.edu
9:00 – 10:30 p.m. or by appointment   Telephone: 777-2659

Statistics is a branch of mathematics that deals with the analysis and interpretation of data collected from the world around us. As such, statistics is a vital tool for the study of social (as well as physical) phenomena. Indeed, knowledge of statistics is becoming vital for those engaged in professions related to the social sciences, including public administration, law, social work, and journalism, among others. This course is an introduction to statistical analysis and its application to the study of society and politics. Students will be expected to develop an understanding of the nature of statistical analysis, probability theory, and hypothesis testing. Moreover, students are challenged to recognize the relevance of statistical analysis for their work outside of this course, be it of a research or professional orientation.

Since this is an introduction to statistics, I can safely assume that most students enrolled in the class have no prior background in data analysis or statistics. Furthermore, I recognize that some students have relatively weak backgrounds in mathematics. In this light, I have made every effort to make this course "self contained," though I do assume that you possess a basic familiarity with algebra and geometry. I am less concerned with what knowledge you initially bring to the course, than I am with the knowledge you have when you leave. You should have the same attitude. Past experience suggests that many of you probably "fear" taking this course. However, if you leave your unwarranted fears and predispositions at the door, and if you work *very hard*, this course is actually quite rewarding and, dare I say, *fun*!

REQUIREMENTS:

Texts: All students should purchase the following book, which is available at the Russell House Bookstore:

Freund, John E. 1973. *Introduction to Probability*. Mineola, NY: Dover Publications, Inc.

Stata Corp. 2003. *Getting Started with Stata for Windows*. College Station, TX: Stata Press.

Wonnacott, Thomas H., and Ronald J. Wonnacott. 1990. *Introductory Statistics*, 5th ed. New York: John Wiley and Sons.

Some additional readings may be suggested during the course of the semester.

Assignments and Grading:

Homework assignments will be given regularly (on a near weekly basis). Most of these assignments will be pencil and paper exercises, requiring calculations and interpretation of statistical results. *I expect students to work on these assignments individually.* I recognize that group study is alluring, but collaborative work will provide fewer benefits to you individually in the long run (and on the examinations).

There will be two examinations in this course: a midterm and final examination. Undergraduates enrolled in the course will be given a midterm examination to be completed during regular class time. Graduate students are required to complete three-hour examinations.

Your course grade will be determined as follows:

Homework Assignments	50%
Midterm Examination	20% (3 Hr. Exam for Grad Students)
Final Examination	20%
Class Participation	10%

Undoubtedly, some of you will find the material in this class difficult to grasp. The textbooks, lectures, and assignments have been compiled to make understanding statistics an *easier* task. Yet, you should not fool yourself by thinking that this course will be *easy*. This course is very demanding, both of your time and brain power. I will be happy to meet with you during office hours, or by appointment, if the material confuses you. This course is sometimes hard, plain and simple, and, unfortunately, no amount of complaining will make it better—seeking out your professor, T.A., and working hard *will* make it better though.

All assignments and exams are to be completed on the assigned dates. No make-up exams or incompletes will be given for this class, except under the most extreme circumstances.

REQUIRED READINGS

18 Aug   Course Introduction

23   The Language of Science

  •   Wonnacott and Wonnacott, Chapter 1

25   Univariate and Descriptive Statistics

   - Wonnacott and Wonnacott, Chapter 2

30   Univariate and Descriptive Statistics, cont.

   - Wonnacott and Wonnacott, Chapter 2

01 Sep   NO CLASS – AMERICAN POLITICAL SCIENCE ASSOCIATION MEETING

06   Laboratory Practicum I – Data Management

   - *Getting Started with Stata*, Chapters 5-9 and 12

08   Laboratory Practicum II – Univariate and Descriptive Statistics

   - *Getting Started with Stata*, Chapters 15 and 17

13   Probability I

   - Alpha Chiang, Selections on Set Theory
   - Wonnacott and Wonnacott, Chapter 3
   - Freund, Chapters 1-3

15   Probability I, cont.

20   Probability II

   - Wonnacott and Wonnacott, Chapter 3
   - Freund, Chapters 4-6

22   Probability II, cont.

27   Probability Distributions I

   - Wonnacott and Wonnacott, Chapter 4
   - Freund, Chapters 7 and 8

29   Probability Distributions I, cont.

04 Oct   Probability Distributions II

- Wonnacott and Wonnacott, Chapter 4 and 5

06   Probability Distributions II

11   Sampling Theory and in Practice

- Wonnacott and Wonnacott, Chapter 6

13   *Fall Break !!!*

18   Laboratory Practicum III – Sampling Theory and Monte Carlo Experiments

20   **MIDTERM EXAMINATION**

25   Point Estimation

- Wonnacott and Wonnacott, Chapter 7

27   Confidence Intervals

- Wonnacott and Wonnacott, Chapter 8

01 Nov   Confidence Intervals, cont.

03   Hypothesis Testing

- Wonnacott and Wonnacott, Chapter 9

08   Hypothesis Testing, cont.

10   Laboratory Practicum IV – Hypothesis Testing

15   Chi-Square

- Wonnacott and Wonnacott, Chapter 17

17   Correlation

- Wonnacott and Wonnacott, Chapter 15 (Selections)

22   Correlation, cont.

24   *Thanksgiving Break !!!*

29   Bivariate Regression

            •   Wonnacott and Wonnacott, Chapters 11, 12, and 15 (Selections)

01 Dec   Laboratory Practicum V – Bivariate Regression

FRIDAY, DECEMBER 9, 2005 @ 2:00 P.M. – FINAL EXAMINATION