I. Introduction

The purpose of this course is to provide the foundation for quantitative methods in political science. In other words, this will be an introduction to data analysis and statistics. After taking this class, you should be:

- Up to date to continue on to the material presented in 202B
- Able to perform basic diagnostic and investigative analysis, and simple regression analysis of political science data
- Understand basic terminology in methods sections of scholarly work

This course will provide only an introduction to regression analysis, so you will not be able to understand the intricacies of the quantitative analyses in journal articles or run complex regressions yourself. To be able to achieve these properly, you need to take 202B.

You may ask yourself why we offer statistics in this department, rather than having you take the intro level courses in the statistics department, or econometrics courses in the economics department. By offering this course, we can adjust the level and pace for the political science graduate students’ background, which may not be as extensive in calculus or math as students in statistics or economics. We also teach the students how a political scientist uses these methods, by using references, examples and data from different fields of political science.

II. Requirements and Grading

We will use Ross Sheldon’s Introductory Statistics (2nd ed.) as the textbook. Please read the chapters listed in the weekly schedule (below) BEFORE class, even if you don’t understand the material exactly. If you come prepared, the lecture will help things fall into place.

Keep your email address at ilearn current, as I use the email list there to make announcements, clarifying comments etc., and it’s best for you if you didn’t miss them. I recommend using your @ucr email as it is more reliable (it won’t filter out emails from ilearn).

Your grade will be based on 4 assignments and a take home final exam. You may work together on the assignments, but you should do the “write up” by yourself. No collaboration of any kind on the take home final exam. Make sure you show your work in the assignments and the exam.

Your final grade will be: 40% final exam, 60% assignments (15% each).
The assignments will require that you use STATA. I will show you the basics of STATA as we cover
the material in class, but you need to play around with it to explore the whole extent of options it
provides. The “help” menus in STATA have a wealth of information to help make the most of this
software, and it is mostly up to you to learn them. I will teach you how to “survive” STATA, you will
teach yourself how to “use” it. The assignments will be perfect opportunities for this.

Late Submissions: Assignments are always due in the beginning of class on Tuesdays on the days
indicated below. Also see below for the due date for the final. If you submit an assignment or the final
late, there will be a penalty. You will lose 20% of the total possible points every day they are late.

Academic Honesty: If you use somebody else’s words or ideas, you have to cite them. You can work
together on the assignments, but that is the extent of permissible collaboration. (For example, you can
collaborate about the specification of a command to produce the answer to a question and discuss what
the output means; but everybody needs to run their own command, get their own results, report those
results, write up their interpretation of the results by themselves. If you are reporting STATA output
without even opening the program, there is some misconduct there!!!).

III. Weekly Schedule:

Week 1: Sep 24
- Introduction – going over the syllabus

Week 2: Sep 29 and Oct 1
- Introduction (Ross Ch.1)
- Describing Data: Graphs (Ross Ch. 2, Appendices B and C.)

Week 3: Oct 6 and 8
- Summarizing datasets (Ross Ch. 3)
- Probability Theory (Ross Ch. 4 (4.1-4.5))

Week 4: Oct 13 and 15
- Probability Theory continued
- Conditional Probability: Bayes’ Rule (Ross Ch. 4 Section 4.6)
- Discrete Random Variables (Ross Ch. 5)
  Assignment 1 due on Oct 13, Tue.

Week 5: Oct 20 and 22
- Continuous random variables (Ross Ch. 6)
- Normal random variables

Week 6: Oct 27 and 29
- Distributions of sampling statistics (Ross Ch. 7)
- Sampling, surveys, case selection
Week 7: Nov 3 and 5
- Interval estimation (Ross Ch. 8)
- Hypothesis Testing (Ross Ch. 9)
  Assignment 2 due Nov 3, Tue.

Week 8: Nov 10 and 12
- Hypothesis tests for two populations (Ross Ch. 10)
- Cross Tabs, Goodness of Fit Tests (Ross Ch. 13)

Week 9: Nov 17 and 19
- Linear Regression (Bivariate) (Ross 12)
  Assignment 3 due Nov 17, Tue

Week 10: Nov 24
- Continue Linear Regression (Bivariate),
- Intro to Linear Regression (Multivariate)
  Nov 26 is a university holiday: Happy Thanksgiving!

Week 11: December 1 and 3
- Linear Regression (Multivariate)
- Review and conclusion
  Assignment 4 due Dec 1, Tue.

Take home final:
Pick up at my office Dec 4, 2009 Friday AT NOON,
Submit Dec 7, 2009 Monday AT 9 AM.

Useful online references:
http://davidmlane.com/hyperstat/;
http://www.psychstat.smsu.edu/sbk00.htm;
http://www.statsoftinc.com/textbook/esc1.html;
http://www.ats.ucla.edu/stat/

STATA Resources: http://www.ats.ucla.edu/stat/stata/default.htm