POLS 201
Political Data Analysis
Spring 2007

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Course Description and Purpose:

The object of this course is to understand the how and why of basic statistical analysis. The plan for the course includes no lecture-based examinations and no term papers, and relies instead on a number of primary data research projects to assess the students' understanding of the various statistical tools needed to make sense of the data collected. These projects will cover the following statistical concepts and procedures:

1. Descriptive Statistics: Categorical data
2. Descriptive Statistics: Quantitative data
3. Probability Theory
4. Z-Scores
5. Probability Distributions
6. Comparing quantitative observations from two different groups: the t-test
7. Assessing the relationship between one quantitative measure and another: Correlation
8. Comparing categorical observations from two or more different groups: the Chi- square test
9. Comparing quantitative observations from two or more different groups: ANOVA
10. Assessing the relationship between a quantitative measure and time: Time Series Regression
11. Assessing the relationship between two quantitative measures: Regression

These projects, with some necessary exceptions, will be completed using the computer program known as SPSS (Statistical Package for the Social Sciences).

Any student with special instructional needs is requested to discuss those needs with me at the student's earliest convenience.

DAILY COURSE SCHEDULE

Date	Topic and Assignments Due
January 17	Syllabus and introduction
January 19	Qualitative data
January 22	Quantitative data **(Assignment. 1: Qualitative data due)**
January 24	Quantitative data
January 26	Probability theory **(Assignment. 2: Quantitative data due)**
January 29	Probability theory
January 31	Normalization **(Assignment 3: Probability theory due)**
February 2	Normalization
February 5	Review: Data and probability theory **(Assignment 4: Z-scores due)**
February 7	Review: Data and probability theory
February 9	**MIDTERM 1**
February 12	Probability distributions
February 14	Probability distributions
February 16	Probability distributions **(Assignment 5: Probability distributions due)**
February 19	T-test
February 21	T-test
February 23	**Lab Analysis of T-test data**
February 26	Correlation **(Assignment 6: T-test due)**
February 28	Correlation
March 2	Correlation

March 5 Correlation

March 7 Chi-square

March 9 **Lab Analysis of Correlation data**

March 12 Chi-square **(Assignment 7: Correlation due)**

March 14 Chi-square

March 16 **Lab Analysis of Chi-square data**

March 19 ANOVA **(Assignment 8: Chi-square due)**

March 21 Review: Inference, Correlation, and Chi-square

March 23 **MIDTERM 2**

March 26-30 SPRING BREAK (no classes)

April 2 ANOVA

April 4 ANOVA

April 6 **Lab Analysis of ANOVA data**

April 9 Time series regression **(Assignment 9: ANOVA due)**

April 11 Time series regression

April 13 **Lab Analysis of Time series regression data**

April 16 Regression **(Assignment 10: Time Series Regression due)**

April 18 Regression

April 20 **Lab Analysis of Regression data**

April 23 Statistical tests and Inference Overview **(Assignment 11: Regression due)**

April 25 Statistical tests and Inference Overview

April 27 Review: ANOVA, Time Series Regression, Regression

April 30 **FINAL PRESENTATIONS**

May 2 **FINAL PRESENTATIONS**

May 4 **FINAL TEST**

Grading:

Assignment	**Points**
1: Qualitative data	10
2: Quantitative data	10
3: Probability theory	10
4: Z-scores	10
Midterm 1	20
5: Probability distributions	10
6: T-test	10
7: Correlation	10
8: Chi-square	10
Midterm 2	20
9: ANOVA	10
10: Time-series regression	20
11: Regression	20
Final project	20
Final test	20
Total	**210**

Assignment Requirements:

Late assignments will not be accepted; if you have a problem e-mail me or talk to me before the assignment is due and we can work something out; do not come to me after. Assignments are due in class on the due date specified in the syllabus. Include your name. Staple the assignment. Write clearly and legibly. Answer questions in order and place the sections in order. Assignments should be hand written, no computer calculations or graphs. Show all your work when performing calculations. There are no make-up assignments. All of the grading will be the responsibility of the TA (Greg). If you have questions about your grade for an assignment talk to the TA (Greg); he is very nice, and funny, I assure you. When we analyze statistics in the lab make sure you attend because this is where I show you how to run the statistics you require to complete the later assignments.

Exams

Exams will be generally fill-in-the-blank format. The exams are designed to test your knowledge and ability to apply the statistical concepts learned in the course. There may be some calculation questions, but they will be simple and formulas will be provided if necessary; most of the questions on the exams will test conceptual knowledge. Exams will not be cumulative.

Final Project and Presentation:

The final project consists of replicating one of the previous assignments on your own. You may choose to run an ANOVA, Chi-square, or regression statistic on new data that you have collected. Answer all the same questions that were required for the previous assignment in writing that is to be handed in (worth 10 points). You are also required to make a short 1-2 minute presentation of your findings. Make a visual display of the SPSS analysis printout (i.e., overhead) and briefly summarize your findings in front to the class (10 points just for presenting, presentation quality is not graded). The final presentation is required in order to receive a grade for the final project. You must also be present for the presentations of your fellow students to receive a grade for the final project.