
POLITICAL DATA ANALYSIS

POS 6737 –SECTION 2A48
DEPARTMENT OF POLITICAL SCIENCE, UNIVERSITY OF FLORIDA
SPRING 2016

INSTRUCTOR
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OFFICE HOURS: MWF 12:30-1:30
CLASS MEETS: MAT 251, 8:30-11:30, MON

GRADER:
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COURSE DESCRIPTION & OBJECTIVES

This course provides an introduction to the theory and practice of quantitative data analysis in political science. Most of the course will focus on probability theory, mathematical statistics and interpretation. The primary objective is to provide the foundation that will be necessary for basic data collection and analysis and for applied analysis. At the end of the semester, students should find themselves equipped with the tools conduct statistical analysis on existing data.

The course has four main goals. First, the students are expected to learn how to design and carry out research that employs statistical techniques as a means of testing substantive theories of politics. Second, the students are expected to build a good foundation in statistics that would prepare them for learning more advanced statistical tools and analysis. Third, the students are expected to learn enough statistical skills to be able to understand as well as engage published works in political science research that uses statistical analysis as means of testing theoretical arguments. Fourth, students should be able to analyze real world political data. In the weekly class meeting the course will more or less be conducted as a lecture-based workshop. Learning how to use available statistical software – Stata– is a must to succeed in this course.

Specific goals this semester include:

- developing testable hypotheses
- collection and manipulation of data
- develop statistical literacy and systematic approaches to research
- summarize and display data accurate and effectively
- compute and interpret descriptive statistics
- construct confidence intervals and test hypotheses for numerical variables (t tests)
- prepare contingency tables and test hypotheses for categorical variables (Chi-sq tests)
- build simple bivariate and multivariate linear regression models and interpret the output
- draw appropriate inferences from the results of statistical analyses and report findings
- interpret the results of research as presented in journal articles and the popular press
- present research findings in written format
- learn basic statistical software

REQUIREMENTS & EVALUATION

The requirement for this course is simple: work diligently and persistently. **This includes attending classes**, doing the readings carefully before the seminar meets, and working regularly on the homework. Each student should expect to be spending time learning how to effectively use the statistical software commonly used to estimate the models discussed in class (Stata 13+).

There will be a number of homework assignments that the students must complete and turn in. The homework assignments are due on the specified dates; **no late submissions are accepted**. In addition, students are strongly encouraged to solve the odd-numbered exercises at the end of each chapter of the Agresti textbook. The answers for the Agresti problems are provided at the back of the book. This is a powerful way to put into practice the concepts learned in each chapter as well as provide you with much needed exercise to effectively understand and master the purported statistical skills.

Communicating your results to others is as important as getting good results in the first place. Every assignment – homework and exams - requires interpretation and is as important as getting the correct result. Do not submit raw computer output. Assignments should be submitted as a PDF file if possible.

REQUIRED READING MATERIALS

Agresti, Alan and Barbara Finlay. 2009. *Statistical Methods for the Social Sciences, 4th Edition*. New York: Pearson.

Acock, Alan C. 2014. *A Gentle Introduction to Stata, 4th Edition*. College Station, TX: Stata Press.

Additional readings as noted in the course schedule, available on Canvas.

COMPUTER REQUIREMENTS

All models in this class can be estimated using the Stata software package. In addition, students should bring laptops to class, as the final hour of each session is devoted to Stata. Stata licenses are available via UF Apps. You may also purchase a personal license directly from Stata (please see me for more information). The best on-line resource for learning Stata is at UCLA:

<http://www.ats.ucla.edu/stat/stata/>.

DISTRIBUTION OF GRADES

Distribution of Grades

25%: Six homework assignments. Overall the homework assignments will count for 30% of the overall grade. No excuse will be accepted for not turning any assignment (except when justified with officially acceptable documentation). All assignments are due typed and double-spaced at the beginning of class on their respective due dates via Canvas. No late submissions accepted as we will go over the homework in class. The lowest scoring of the six *turned in* homeworks will be dropped, thus each homework that is included in the final grade is worth 5%.

30%: Midterm Exam in class. The midterm will consist of problem sets and some definitions. Students will be allowed the use of a calculator and will be provided formula sheets.

40%: Final Exam. The final will require you to analyze data and present professional results to a client (the instructor).

5%: Participation. Students are expected to attend class, arriving on time. They are also expected to participate and use Stata during class.

Grading

Our grading scale is as follows:

A = 93-100	A- = 90-92.9	B+ = 87-89.9	B = 83-86.9	B- = 80-82.9
C+ = 77-79.9	C = 73-76.9	C- = 70-72.9	D = 60-69.9	F < 60

In addition, I will be judging the writing and presentation on your exams and homework as a whole, looking at your knowledge, as well as your judgment in selection and presentation of material.

Please note that the UF's graduate grading system allows passing grades of A, A-, B+, B, B-, C+ and C. With that in mind, work that does not merit at least a B is not considered acceptable graduate work.

The following is offered as a guideline:

A: Exceptional work for a graduate student. Work at this level is unusually thorough, well-reasoned, creative, methodologically sophisticated, and well written. Work is of exceptional, professional quality. An excellent grasp of the facts. Evidence of considerable organizing intelligence and powers of argument.

A-: Very Good: Very strong work for a graduate student. Shows signs of creativity and a strong understanding of appropriate analytical approaches, is thorough and well-reasoned, and meets professional standards.

B+: Good. Sound work for a graduate student; well-reasoned and thorough, without serious analytical shortcomings. This grade indicates the student has fully accomplished the basic objectives of the assignment. Sound factual knowledge. Evidence of sound expository power, i.e. a clear line of argument throughout the essay.

B: Adequate: Competent work for a graduate student with some evident weaknesses. Demonstrates competency in the key objectives but the understanding or application of some important issues is less than complete.

B-: Borderline: Weak work for a graduate student but meets minimal expectations. Understanding of key issues incomplete.

C+/C/C-: Deficient: Inadequate work for a graduate student; does not or only barely meets minimal expectations. Work is poorly developed or flawed by numerous errors and misunderstandings of important issues.

F: Unacceptable. Weaknesses and limitations pervasive.

OTHER POLICIES

Requirements for class attendance are consistent with the attendance policy stated in the Graduate Catalog Regulations found here: <http://gradcatalog.ufl.edu/content.php?catoid=6&navoid=1219>. Attendance is required.

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Information on current UF grading policies for assigning grade points and acceptable graduate-level grades may be found here: <http://gradcatalog.ufl.edu/content.php?catoid=6&navoid=1219>.

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

All work in this class is to be your own. Please take note of the student Honor Code, Student Conduct Code and Standards of Ethical Conduct, which may be found in the Graduate Catalog: <http://gradcatalog.ufl.edu/content.php?catoid=6&navoid=1219>.

All grades for the course (homework, exams, etc) are kept on the instructor's personal computer. Grades are posted to Canvas as a courtesy. If I change an assignment score (i.e., return points), these changes are posted to my gradesheet, but not necessarily Canvas.

COURSE SCHEDULE*

Date	Subject	Reading	Due
11-Jan	Introduction; Data Ethics <i>Getting Started in Stata</i>	Agresti, 1 <i>Acock, 1</i> Rdgs Canvas: King/Sands; News Accounts; Lupia/Elman	
25-Jan	Sampling/Measurement <i>Entering Data</i>	Agresti, 2 <i>Acock, 2</i>	Homework 1
1-Feb	Introduction to Univariate Analysis; Descriptive Statistics <i>Transforming Variables; Do files</i>	Agresti, 3 <i>Acock 3, 4</i>	
8-Feb	Probability Distributions; Visualization <i>Descriptive Statistics, Visualization</i>	Agresti, 4 <i>Acock 5</i>	Homework 2
15-Feb	Statistical Inference: Estimation <i>Making Comparisons</i>	Agresti, 5	
22-Feb	Statistical Inference: Significance Tests <i>Tests for One Mean</i>	Agresti, 6 <i>Acock 7</i>	
7-Mar	Comparison of Two Groups <i>Tests for Two Means; Stata Review</i>	Agresti, 7 <i>Acock, 7</i>	Homework 3
14-Mar	Midterm Exam		
21-Mar	Intro to Bivariate Analysis; Associations with Categorical Variables <i>Statistics & Graphs for Two Categorical Variables; Controlled Comparisons</i>	Agresti, 8 <i>Acock, 6</i>	
28-Mar	Linear Regression, Correlation; <i>Bivariate Correlation and Regression</i>	Agresti, 9 <i>Acock, 8</i>	Homework 4
4-Apr	Introduction to Multivariate Relations <i>Multiple Regression</i>	Agresti, 10, 11 <i>Acock, 9</i>	
11-Apr	Comparing Groups, ANOVA, Dummy Variables, Interaction Effects <i>ANOVA, Dummy Variables, Interactions</i>	Agresti, 12, 13 <i>Acock, 9, 10</i>	Homework 5
18-Apr	Logistic Regression <i>Logistic Regression</i>	Agresti, 15 <i>Acock, 11</i>	Homework 6
29-Apr	Final Exam		

Items in *italics* relate to Stata work.