

Political Data Analysis

POS 6737 –Section 2A48 (M.A. course)

Department of Political Science, University of Florida

Spring 2019

PROFESSOR

PROF. SUZANNE M. ROBBINS

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OFFICE HOURS: MONDAYS 12PM-3PM

CLASS MEETS: MAT 0011, 1145-245, WEDS

COURSE GRADER

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1 COURSE DESCRIPTION & OBJECTIVES

This course introduces the theory and practice of quantitative data analysis. The primary objectives are to acquire the foundational skills necessary for basic data collection and analysis, to prepare you for subsequent data analysis courses, and to participate meaningfully in academic decision making (as a reviewer and colleague). At the end of the semester, students should find themselves equipped with the tools to develop their own statistical models for empirical research in political science.

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:

1. developing testable hypotheses
2. the collection and manipulation of data
3. developing statistical literacy:
 - a. summarize and display data accurate and effectively
 - b. compute and interpret descriptive statistics
 - c. construct confidence intervals and test hypotheses for numerical variables (t tests)
 - d. prepare contingency tables and test hypotheses for categorical variables (Chi-sq tests)
 - e. build simple bivariate and multivariate linear regression models and interpret the output
 - f. draw appropriate inferences from the results of statistical analyses and report findings
 - g. interpret the results of research as presented in journal articles and the popular press
4. presenting research findings in written format
5. learning basic statistical software

Each weekly class meeting consists of lectures enhanced with software instruction. Labwork constitutes an important component of the learning enterprise – learning how to use available statistical software (Stata) is a must to succeed in this course.

2 REQUIRED MATERIALS

2.1 REQUIRED READING MATERIALS

1. Agresti, A. and B. Finlay. 2009. *Statistical Methods for the Social Sciences*, 4th Ed. NY: Pearson.
2. Kohler, Ulrich and Frauke Kreuter. 2012. *Data Analysis Using Stata, 3rd Edition*. Stata Press.
3. Additional readings as noted in the course schedule, available on Canvas.

2.2 TECHNOLOGY REQUIREMENTS

All models in this class can be estimated using the Stata software package using a standard computer.

The following are required to complete the course:

1. Bring a laptop to class. Learning software is interactive.
2. Access a recent version of Stata (either 14 or 15).
 - a. Personal licenses are available from Stata.com (please see me if you are doing this option).
 - b. Access a UF provided version of the course at UF Apps. To do so you will need to install the Citrix server on your laptop. Instructions for the Citrix server and UF apps are on our Canvas page.
3. Access our course on Canvas and the R drive (more in class).

3 ASSIGNMENTS/ASSESSMENT

3.1 OVERVIEW

Student progress will be measured using multiple methods. The class consists of homework assignments, in class lab work (participation), and in class written exams. *Please note that while grades will be entered into Canvas, the Excel spreadsheet on my private, secure, computer is the official course record.*

Work diligently and persistently. Attend classes. Read carefully before the seminar meets. Do the work (homework, problem sets, research paper) on time. Practice Stata.

Communicating your results to others is as important as getting good results in the first place. Every assignment – homework, exam, paper - requires interpretation and is as important as getting the correct result. ***Do not submit raw computer output as you will not receive credit. You must submit do files with the assignment when requested.***

3.2 HOMEWORK (25%):

You will have six homework assignments (problem sets) throughout the semester to apply the material from class and lab. These are graded must be submitted before class the day they are due. Because we will go over the problem sets in class, **no late work will be accepted.** It's very easy to lose points for

failing to complete the assignments and follow the directions, so please be sure to give yourself ample time to complete and review your work. The lowest scoring of the six *turned in* homework assignments will be dropped.

If you would like extra practice, consider solving 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. Repetition and practice make learning the material easier.

3.3 LAB WORK/PARTICIPATION (5%):

In most seminars, participation means raising questions and participating in debates. In this class, attending class and working on in-class Stata assignments is the most critical component of participation. Failure to work on Stata labs will result in no participation score for the day. In addition, some worksheets may be assigned on an ad hoc basis as needed. They will be graded complete/incomplete and count toward your lab participation grade. **Again, no late work will be accepted.**

3.4 MIDTERM EXAM (30%):

In class. The midterm will consist of problem sets and some definitions relating to the first part of the class. You will work with a small data set to calculate descriptive and inferential statistics. In addition, you will demonstrate your understanding of the material by the quality of your interpretive skills.

3.5 FINAL EXAM (40%):

The final will require you to analyze data and present professional results to a client (the instructor).

3.6 GRADING SCALE

I will use the following grading scale for those assignments receiving a letter grade as well as your overall grade. Please note that I do not round grades until the final course grade. In addition, the excel spreadsheet on my computer is the official record of your grade (not Canvas) until grades are submitted to the registrar.

| | | | | | | | |
|----|--------|----|-------|----|-------|----|-------|
| A | 90-100 | B | 80-85 | C | 70-75 | D | 60-65 |
| A- | 88-89 | B- | 78-79 | C- | 68-69 | D- | 58-59 |
| B+ | 86-87 | C+ | 76-77 | D+ | 66-67 | E | <58 |

4 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. Missing a class means falling behind, and for many, this has strong detrimental effect on performance.

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>.

5 COURSE SCHEDULE

| Date | Subject | Reading | Due |
|--------|--|---|------------|
| 9-Jan | Introduction; Data Ethics <i>The First Time*</i> | Agresti 1 <i>Kohler/Kreuter 1</i> Rdgs Canvas: King/Sands; News Accounts; Lupia/Elman | |
| 16-Jan | Sampling/Measurement <i>Reading & Writing Data</i> <i>The Do File</i> | Agresti 2 <i>Kohler/Kreuter 11</i> <i>Kohler/Kreuter 2</i> | Homework 1 |
| 23-Jan | Introduction to Univariate Analysis; Descriptive Statistics <i>The Grammar of Stata</i> <i>Statistical Commands</i> | Agresti 3 <i>Kohler/Kreuter 3</i> <i>Kohler/Kreuter 4</i> | |
| 30-Jan | Probability Distributions <i>Creating and Changing Variables</i> | Agresti 4 <i>Kohler/Kreuter 5</i> | Homework 2 |
| 6-Feb | Statistical Inference: Estimation <i>Creating and Changing Graphs</i> | Agresti 5 <i>Kohler/Kreuter 6</i> | |
| 13-Feb | Statistical Inference: Significance Tests <i>Describing and Comparing Distributions</i> | Agresti 6 <i>Kohler/Kreuter 7</i> | |
| 20-Feb | Comparison of Two Groups <i>Statistical Inference</i> | Agresti 7 <i>Kohler/Kreuter 8</i> | Homework 3 |
| 27-Feb | Midterm Exam <i>No Stata lab</i> | | |
| 13-Mar | Intro to Bivariate Analysis; Associations with Categorical Variables <i>Stata Review</i> | Agresti 8 | |
| 20-Mar | Linear Regression, Correlation; <i>Introduction to Linear Regression</i> | Agresti 9 <i>Kohler/Kreuter 9.1</i> | Homework 4 |
| 27-Mar | Introduction to Multivariate Relations <i>Multiple Regression</i> | Agresti 10, 11 <i>Kohler/Kreuter 9.2, 9.5</i> | |
| 3-Apr | ANOVA; Dummy Variables in Regression <i>Model Extensions</i> | Agresti 12, 13 <i>Kohler/Kreuter 9.4, 9.5</i> | Homework 5 |
| 10-Apr | Model Building in Regression; Diagnostics <i>Regression Diagnostics</i> | Agresti, 14 <i>Kohler/Kreuter 9.3, 9.4, 9.5</i> | |
| 17-Apr | Logistic Regression <i>Logistic Regression</i> | Agresti 15 <i>Kohler/Kreuter 10.1, 10.2,</i> <i>10.3</i> | Homework 6 |
| 24-Apr | Workshop, Questions, Catchup | | |
| 30-Apr | FINAL EXAM 10:00am-12:00pm | | |

*Items in *italics* relate to Stata work/lab.