Political Data Analysis

POS 6737 –Class Number 19220 (M.A. course)
Department of Political Science, University of Florida
Spring 2019

PROF. SUZANNE M. ROBBINS
205 ANDERSON HALL
SUZANNE.ROBBINS@UFL.EDU

GRADER: MUHARREM BAGRIYANIK,
MBAGRIYANIK@UFL.EDU

OFFICE HOURS: M/W 10:30-12:00 (ZOOM)
CLASS MEETS: ZOOM, WEDS 3-6 PM

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 data analysis in a post-graduate career. 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, public affairs and political campaigning.

The course has three main goals. First, students are expected to build a good foundation in statistics that would prepare them for learning more advanced statistical tools and analysis. Second, students are expected to learn enough statistical skills to be able to understand as well as engage with published works in political science research that uses statistical analysis as means of testing theoretical arguments. Third, students should be able to analyze real world political data. In the weekly class meeting will be conducted as a lecture-based workshop. Learning how to use available statistical software – in this case R – 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 statistically findings professionally
5. learning basic statistical software

2 REQUIRED MATERIALS

2.1 REQUIRED READING MATERIALS

1. Kellstedt, Paul M., and Guy D. Whitten. 2018. *Fundamentals of Political Research, 3rd Edition.* Cambridge University Press.
2. Hadley Wickham and Garrett Grolemund. 2016.*R for Data Science: Import, Tidy, Transform, Visualize, and Model Data.* Sebastopol, CA: O'Reilly Media, Inc. (free at: https://r4ds.had.co.nz/)
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 R software package using a standard computer.

The following are required to complete the course:

1. A computer: learning software is interactive.
2. Download and install R and related packages on your computer (we will do this the first day of class)
3. Access our course on Canvas.

As a reminder, this course is taught synchronously via Zoom. A link to our course is on Canvas.

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 R.

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. ***Professionalism matters: do not submit raw computer output as you will not receive credit.***

3.2 WEEKLY PROBLEM SETS (50%):

We will have problem sets almost every week. The problem sets incorporate both the material from the lecture and what we are learning in R. The more you practice, the better you get – and the more you learn. While you may work with others in small groups, all work is to be your own. That means you can talk about the problems, but you cannot divide and conquer so that I have 15 identical submissions. It is good practice to first try to develop answers on your own and then meet in a group setting to discuss potential difficulties. While group discussion and work are explicitly encouraged, you are required to write and hand in your own computer code and final write-up of the answers. DO NOT simply copy computer code or answers from your classmates. Write-ups have to be provided in a well-formatted,

electronic format (e.g., R Markdown). Late homework will not be accepted, and all work is due by noon before class. I will drop your two lowest homework scores when calculating your final grades. *The homework may be difficult, especially in the beginning. Keep trying, do not give up.*

- Problem Set Grading:
    - (40 points; 100%) Problem set is 100% complete. Every question was at-tempted and answered, and all are correct. Document is clean and easy to follow. Code is well-written. Work is exceptional. *These are rare*.
    - (37 points; ~93%) Problem set is 75—99% complete and most answers are correct. *This is the expected level of performance.*
    - (25 points; ~63%) Problem set is less than 75% complete and/or most answers are incorrect. This indicates that you need to improve- *so please come for help so we can strategize early.*

3.3 Midterm Exam (20%):

In class (sort of). 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. We will do this on Zoom, but details are forthcoming.

3.4 Final Project (30%):

The final will require you to analyze data and present professional results to a client (the instructor). The goal of the final project is to put together a report for you client using the knowledge gained throughout the semester. A well put-together project, that really shows what you know, can make all the difference at the end of the semester.

3.5 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 Course Policies

4.1 Attendance/Late Work:

Do not be late to class. I do not take attendance, though Zoom does. You should come prepared to work. Missing even a single class can be difficult to overcome, so do your best to avoid it. Late homework, as noted above, is not accepted.

4.2 FALLING BEHIND:

This class will move quickly. At first you may feel comfortable with the material, or you may feel intimidated walking in. I am here to help you. If you fall behind, I cannot help you unless you come see me.

4.3 ZOOM CAMERA/RECORDING:

Our class sessions may be audio visually recorded for students in the class to refer back to and for enrolled students who are unable to attend live. Students who participate with their camera engaged or use a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

5 OTHER POLICIES

5.1 ATTENDANCE:

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.

5.2 COMMUNICATIONS AND LOGISTICS:

Almost all our work will take place within the Canvas and Zoom platforms. Please feel free to email me at any time. While I try to answer email quickly, I sometimes need 24-48 hours to do so. In addition, I hold office hours via Zoom. You are more than welcome to attend office hours (I have a link within Canvas to make appointments). You may also email me for a time outside of my official hours should you need it.

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via **GatorEvals.** Guidance on how to give feedback in a professional and respectful manner is available at gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or viaufl.bluera.com/ufl/. Summaries of course evaluation results are available to students atgatorevals.aa.ufl.edu/public-results/.

5.3 Academic Misconduct

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code." On all work submit-ted for credit by students at the University of Florida, the following pledge is either re-quired or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honorcode/) specifies several behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with me.

5.4 Disability services

Students with disabilities requesting accommodations should first register with the Dis-ability 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.

5.5 Health and Wellness Resources

U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352-392- 1575 so that a team member can reach out.

Counseling and Wellness Center: https://counseling.ufl.edu/, 392-1575;

University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS): Student Health Care Center, 392-1161.

5.6 Online Course Evaluations

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations athttps://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/.

6 COURSE SCHEDULE

Date	Subject	Reading
13-Jan	Introduction; Data Ethics; Review of Research *Getting Started in R**	Kellstedt/Whitten Chapters 1-4 (skim) *Wickham/Grolemund, Chapter 1*
20-Jan	Sampling/Measurement *Intro/Visualization/Workflow*	K/W: Chapter 5, first part of Chapter 6 *W/G: Chapters 2-4*
27-Jan	Descriptive Statistics *Transformations/Workflow*	K/W: Chapter 6 *Chapters 5-6*
3-Feb	Probability Distributions *Continued from previous weeks*	K/W: Chapter 7 *W/G: Chapter 7.0-7.4*
10-Feb	Statistical Inference: Estimation, Confidence Intervals *Review and Practice*	
17-Feb	Statistical Inference: Significance Tests *More on Data Wrangling*	*W/G: Chapters 9-12*
24-Feb	Comparison of Two Groups (Diff/Means) *More on Data Wrangling*	K/W: Chapter 8 *W/G: Chapters 9-12*
3-Mar	Midterm Exam *No R lab*	
10-Mar	Bivariate Analysis Continued	K/W: Chapter 8 *W/G: Chapter 7.5-7.8*
17-Mar	Linear Regression, Correlation	K/W: Chapter 9 *Kohler/Kreuter 9.1*
24-Mar	RECHARGE: NO CLASS	
31-Mar	Multiple Regression	K/W: Chapter 10
7-Apr	ANOVA; Dummy Variables in Regression	K/W: Chapter 10 *W/G: Chapter 23.4-23.6*
14-Apr	Model Building in Regression; Diagnostics	K/W: Chapter 11 *R Markdown & Review*
21-Apr	Logistic Regression/Time Series	K/W: Chapter 12 *R Markdown & Review*
28-Apr	FINAL EXAM (Projects due midnight)	

*Items in *italics* relate to working with R. We will revise this schedule as needed, so please refer to Canvas for changes.