POLI 788 Statistics & Data Analysis
FALL 2020

Tuesday & Thursday 9:45-11:00
Woollen 302 & Zoom Meeting
(Zoom Link Available on Sakai)

Instructor: Dr. Robert M. Jenkins
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Virtual Office hours: Monday 10:30-12:00, Zoom link: https://unc.zoom.us/j/99476863126
Wednesday 1:30-3:30, Zoom link: https://unc.zoom.us/j/91286711507
and by appointment

This course is designed to introduce the fundamentals of data analysis in political science and policy research. The approach accentuates understanding basic concepts and techniques, with emphasis on problem solving and computer applications. The course is designed primarily for students in terminal Master's degree programs and is intended to provide an overview of basic issues in quantitative analysis, including use of statistical software. No previous background in statistics is required.

We begin with methodological issues, including concept formation, measurement of concepts and variables, validity and reliability, explanation and hypothesis formation, and causal inferences. We follow with basic statistics and an introduction to inference. Detailed topics include distributions of single variables, measures of central tendency, and measures of association. We conclude with regression analysis, covering ordinary least squares and logistic regression techniques. Throughout the semester, students are expected to complete homework exercises and a research project to develop understanding of both concepts and techniques.

Learning Outcomes
The course offers a number of learning outcomes for students:

- Clarify the relationship between concepts and measurement
- Familiarity with techniques for transforming, describing, and summarizing data
- Develop skills in formulating explanations, hypothesis testing, and making controlled comparisons
- Understand the relationship between random sampling and underlying populations
- Learn basics of inference and statistical testing
- Develop knowledge of and skills for using regression techniques
- Understand use of logistic regression for categorical variables
- Gain skills and comfort using Stata, the data analysis and statistical software

Fall 2020 Circumstances

Obviously, this semester is very unique and will require flexibility by everyone. I want you to know that I appreciate the difficulties you face. Please communicate with me if you feel challenged in any way. Given the content of the class, I am hoping that we can meet on campus and am planning for such a beginning. A number of you cannot attend in person and I will be broadcasting class sessions on Zoom (see Sakai Course Information folder in the Resources tool for the link). I will also be posting a link to the recordings in case you cannot attend synchronously. If you are uncomfortable with attending in person, I encourage you to take advantage of Zoom. And given the uncertainty of pandemic, we may end up completely on Zoom at any time. I will also be holding only virtual office hours this semester.

For those of you attending in person on campus, please be advised that I will be enforcing university policy:

all enrolled students are required to wear a mask covering your mouth and nose at all times in our classroom. This requirement is to protect our educational community — your classmates and me – as we learn together. If you choose not to wear a mask, or wear it improperly, I will ask you to leave immediately, and I will submit a report to the Office of Student Conduct. At that point you will be disenrolled from this course for the protection of our educational community. An exemption to the mask wearing community standard will not typically be considered to be a reasonable accommodation. Individuals with a disability or health condition that prevents them from safely wearing a face mask must seek alternative accommodations through the Accessibility Resources and Service. For additional information, see Carolina Together.

Requirements

(1) Attend course sessions, do readings, be prepared for discussion. Material in the course is cumulative; so, do not fall behind.

(2) Complete weekly exercises. Exercises will be posted on Sakai prior to the weekend before class on Tuesday. They are due by 5:00 pm on Friday for the week of classes ended on Thursday (previous day).

(3) Take three quizzes during the semester. Please note: While material covered on earlier quizzes will not appear on subsequent quizzes, the material is by nature cumulative.

(4) Complete a research project and short paper. The research paper will demonstrate the ability to use data analysis techniques learned in class, including developing a testable hypothesis and using quantitative data analysis techniques to test the hypothesis. More details will be provided during the semester.

Readings and Workbook

There are two required texts:

Pollock, Philip H. III, & Barry C. Edwards. 2019. *The Essentials of Political Analysis*, 6th edition. CQ Press (EPA)

Pollock, Philip H. III, & Barry C. Edwards. 2019. *A Stata Companion to Political Analysis*, 4th edition. CQ Press. (SCPA)

Additional readings may be introduced on Sakai. Adjustments may be made during the course of the semester.

Stata Software
The course is built around use of Stata data analysis and statistical software. Stata is easily available to UNC students through the Virtual Lab: https://virtuallab.unc.edu/vpn/index.html

You will need to have a Citrix Plug-In to access the Virtual Lab. Here is a link to the help file for setting up the Plug-In: http://help.unc.edu/help/how-do-i-log-on-to-virtual-lab/.

While the SCPA text will help you learn the basics of Stata, there are also many online resources. Here is a simple but thorough overview from Princeton:
http://data.princeton.edu/stata/

Evaluation
The final grades will be based on the three components:
(1) Weekly exercises (25%) – these will be graded on both effort and accuracy, with the former more important than the latter;
(2) Quizzes (45%);
(3) Research project paper (30%) – demonstration of techniques learned during the course; more details will be provided during the semester.

Honor Code
Plagiarism, falsification, cheating, misrepresentation and all other forms of academic dishonesty are serious violations of the UNC Honor Code and come with severe consequences. Violations may lead to an "F" for the course. By taking this class, you are committing to comply with all aspects of the Honor Code regard to the course.
Students should review the Honor Code:
https://studentconduct.unc.edu/sites/studentconduct.unc.edu/files/documents/Instrument.pdf

Students with Disabilities
I am happy to accommodate students with disabilities or medical conditions. If you have a disability or medical condition for which you are or may be requesting an accommodation, you should contact Accessibility Resources & Service as soon as possible. For more information call 919-962-8300, email ars@unc.edu or visit https://ars.unc.edu/.

POLI 788 Course Topics Outline	
Date	**Topic & Reading**
Aug 11	**Introduction**
Aug 13	**Definition & Measurement of Concepts** EPA: Chap. 1
Aug 18	**Introduction to STATA** SCPA: Chap. 1

Aug 20	**Measuring & Describing Variables** EPA: Chap. 2
Aug 25	**Descriptive Statistics** SCPA: Chap. 2
Aug 27	**Transforming Variables** SCPA: Chap. 3
Sep 1	**Proposing Explanations, Framing Hypotheses, Making Comparisons** EPA: Chap. 3
Sep 3 & Sep 8	**Making Comparisons** SCPA: Chap. 4
Sep 10	**Quiz 1**
Sep 15 & 17	**Research Design & Logic of Control** EPA: Chap. 4
Sep 17	**Project Report #1 Due**
Sep 22	**Controlled Comparisons** EPA: Chap. 5
Sep 24	**Making Controlled Comparisons** SCPA: Chap. 5
Sep 29 & Oct 1	**Foundations of Statistical Inference** EPA: Chap. 6
Oct 6	**Tests of Significance & Measures of Association** EPA: Chap. 7
Oct 8	**Inferences about Sample Means** SCPA: Chap. 6
Oct 8	**Project Report #2 Due**
Oct 13	**Chi-Square & Measures of Association** SCPA: Chap. 7
Oct 15	**Quiz 2**
Oct 20 & 22	**Correlation & Linear Regression** EPA: Chap. 8
Oct 27 & 29	**Correlation & Regression with Stata** SCPA: Chap. 8
Nov 3	**Dummy Variables & Interaction Effects** SCPA: Chap. 9
Nov 5 & 10	**Logistic Regression** EPA: Chap. 9
Nov 12 & 17	**Logistic Regression with Stata** SCPA: Chap.10
Nov 17	**Project Report #3 Due**
TBA	**Quiz 3 – Take Home Due**
TBA	**Research Paper Presentations & Final Project Papers Due**