

**POLI 788 Statistics & Data Analysis
FALL 2022**

**Tuesday & Thursday 9:30-10:45
Global Education Center 3024**

Instructor: Dr. Robert M. Jenkins
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**Office hours: Monday 11:30-1:00, Tuesday 11:00-12:00 (Global Ed Center Café),
Friday 10:30-11:30 (zoom) and other times 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 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 and manipulation of data bases. 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.

Learning Outcomes

The course offers a number of learning outcomes for students:

- Clarify the relationship between concepts and measurement
- Familiarity with techniques for 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 to assess relationships between variables using measures of association
- 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

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. They are **due by 1:00 pm on Friday** for the week of classes ended on Thursday (except where otherwise noted). A complete list of weekly exercises is posted in the Homework Assignments subfolder in the Course Information folder in the Resources tool on Sakai.
- (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 short research project. The research project will demonstrate the ability to use data analysis techniques learned in class, including developing a testable hypothesis and performing quantitative data analysis to test the hypothesis. More details about the project will be provided during the semester. There is a subfolder, Project Related Information, in the Course Information folder in the Resources tool on Sakai.

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)

There is a bundle discount for both books. Used copies of *The Essentials of Political Analysis* are entirely appropriate. But the *State Companion* has worksheets that should be new. Check the internet for coupons!

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 login with your Onyen (and Duo dual verification). If it is your first time use of Virtual Lab, you will be prompted to download a Citrix Plug-In to access the Virtual Lab.

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

Assignments & Evaluation

The final grades will be based on the three components:

- (1) Weekly exercises (30%) – these will be graded on both effort and accuracy, with effort the greater factor
- (2) Three quizzes (45%)

(3) Research project (25%) – demonstration of techniques learned during the course; more details will be provided during the semester.

Office Hours

I will be conducting both face to face and virtual office hours. Face to face office hours will take place in my office (Hamilton 370) on Mondays, from 11:00-12:30, and in the café at Global Education Center on Tuesdays, from 11:00-12:00. Please use the “Sign up” tool on Sakai to schedule a 15-minute time slot. You can schedule two consecutive time slots.

Virtual office hours will be on Fridays from 10:30-11:30. Here is the Zoom link: <https://unc.zoom.us/j/93020117577>. No advanced sign up is necessary for the Zoom office hours. Please contact me for an appointment if scheduled times do not work for you.

Attendance Policy

Class attendance is expected except in the case of authorized University activities; disability, religious observance, and pregnancy; or other significant health conditions or personal/family emergency as approved by the responsible University office or authority.

I am very willing to work with anyone to meet attendance needs that do not fall within University approved absences. It is important that you communicate with me about your absence as quickly as possible so that we can develop a plan for missed classes and assignments.

For more information about the University Attendance Policy please visit this page: <https://catalog.unc.edu/policies-procedures/attendance-grading-examination/>

I will record each class session and post the recording to the Panopto tool in Sakai. Here is the zoom link for the course: <https://unc.zoom.us/j/93913012244>

Mask Use

This semester, students are not required to wear a mask in the classroom. If you wish to wear a mask, you are welcome to do so. This policy is subject to change as a result of public health conditions.

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.

Please note: All academic work in this course, including homework, quizzes, and exams, is to be your own work, unless otherwise specifically provided. It is your responsibility if you have any doubt to confirm whether collaboration is permitted.

I recommend that you review the Honor Code:

<https://studentconduct.unc.edu/wp-content/uploads/2021/05/Instrument.pdf>

Accessibility Resources & Services

I am happy to accommodate students with disabilities or medical conditions. If you have a chronic or temporary disability or medical condition for which you are or may be requesting an accommodation, you should contact Accessibility Resources & Service as soon as possible. See the ARS Website for contact information: <https://ars.unc.edu> or email ars@unc.edu.

Counseling & Psychological Services

CAPS is strongly committed to addressing the mental health needs of a diverse student body through timely access to consultation and connection to clinically appropriate services, whether for short or long-term needs. Go to their website: <https://caps.unc.edu/> or visit their facilities on the third floor of the Campus Health Services building for a walk-in evaluation to learn more.

Title IX Resources

Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Reports can be made online to the EOC at <https://eoc.unc.edu/report-an-incident/>. Please contact the University's Title IX Coordinator (Elizabeth Hall, interim—titleixcoordinator@unc.edu), Report and Response Coordinators in the Equal Opportunity and Compliance Office (reportandresponse@unc.edu), Counseling and Psychological Services (confidential), or the Gender Violence Services Coordinators (gvsoc@unc.edu; confidential) to discuss your specific needs. Additional resources are available at safe.unc.edu.

Inclusive Learning Environment

I value the perspectives of individuals from all backgrounds reflecting the diversity of our students. I broadly define diversity to include race, gender identity, national origin, ethnicity, religion, social class, age, sexual orientation, political background, and physical and learning ability. I strive to make this classroom an inclusive space for all students. Please let me know if there is anything I can do to improve. I appreciate any suggestions.

POLI 788 Course Topics Outline	
Date	Topic & Reading
<i>Aug 16</i>	Introduction
<i>Aug 18</i>	Definition & Measurement of Concepts EPA: Chap. 1
<i>Aug 23</i>	Introduction to STATA SCPA: Chap. 1

<i>Aug 25</i>	Measuring & Describing Variables EPA: Chap. 2
<i>Aug 30</i>	Descriptive Statistics SCPA: Chap. 2
<i>Sep 1</i>	Transforming Variables SCPA: Chap. 3
<i>Sep 6</i>	No Class – Wellness Day
<i>Sep 8</i>	Proposing Explanations, Framing Hypotheses, & Making Comparisons EPA: Chap. 3
<i>Sep 13</i>	Making Comparisons SCPA: Chap. 4
<i>Sep 14</i>	Project Report 1 Due
<i>Sep 15</i>	Making Comparisons (cont.) SCPA: Chap. 4
<i>Sep 20</i>	Quiz 1
<i>Sep 22 & 27</i>	Research Design, Research Ethics & Evidence of Causation EPA: Chap. 4
<i>Sep 29</i>	Making Controlled Comparisons EPA: Chap. 5
<i>Oct 4</i>	Making Controlled Comparisons SCPA: Chap. 5
<i>Oct 6 & 11</i>	Foundations of Statistical Inference EPA: Chap. 6
<i>Oct 13</i>	Tests of Significance & Measures of Association EPA: Chap. 7
<i>Oct 17</i>	Project Report 2 Due
<i>Oct 18</i>	Inferences about Sample Means SCPA: Chap. 6
<i>Oct 20</i>	No Class – Fall Break
<i>Oct 25</i>	Chi-Square & Measures of Association SCPA: Chap. 7
<i>Oct 27</i>	Quiz 2 – Take Home Distributed
<i>Oct 27 & Nov 1</i>	Correlation & Linear Regression EPA: Chap. 8
<i>Nov 3</i>	Correlation & Regression with Stata SCPA: Chap. 8
<i>Nov 3</i>	Quiz 2 – Take Home Due
<i>Nov 8</i>	Correlation & Regression with Stata (cont.) SCPA: Chap. 8
<i>Nov 10</i>	Dummy Variables & Interaction Effects SCPA: Chap. 9
<i>Nov 15 & 17</i>	Logistic Regression EPA: Chap. 9

<i>Nov 22</i>	Logistic Regression with Stata SCPA: Chap.10
<i>Nov 24</i>	No Class – Happy Thanksgiving!!
<i>Nov 28</i>	Project Report 3 Due
<i>Nov 29</i>	Logistic Regression with Stata (cont.) SCPA: Chap.10
<i>Nov 29</i>	Quiz 3 – Take Home Distributed
<i>Dec 2</i>	Quiz 3 – Take Home Due
<i>Dec 6</i>	8:00 am – Research Project Presentations
<i>Dec 8</i>	Project Final Report Due