

Political Science 6918

Seminar: Research Methods

Dr. Todd Makse

Spring 2022

Class Meetings: Tuesday 9:00am-11:45am in SIPA 503

Office Hours: Tuesdays 12:30-2:00 (in person) and Wednesdays 1:00-2:30 (on Zoom*)

*Please email me 30 minutes in advance to set up a meeting, in case I'm with another student.

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Course Description:

This class is designed for second-semester graduate students to develop a competence in two of the most common types of statistical inference models: linear regression and logistic regression. This is an applied statistics course with a focus on identifying and executing appropriate statistical tests, as well as other aspects of a quantitative analysis project (e.g. research design, collecting and structuring a dataset, writing up results of statistical analyses). We will not focus on the mathematics underlying statistical tests and we will rarely work in formal mathematical notation. Virtually all statistical tests will be conducted in STATA; we will also spend some time discussing data management in Microsoft Excel. Successful completion of POS 5706 is a prerequisite for the class.

Textbook and Readings

The textbooks for the class are:

*Philip Pollock and Barry Edwards. 2019. *The Essentials of Political Analysis*, 6th Edition.

*Philip Pollock. 2019. *A STATA Companion to Political Analysis*, 4th Edition.

Grading components:

Problem sets 30%

Research project 70% (Dataset construction: 15%; Project memos: 25%; Final paper: 30%)

The grading scale for final grades will be as follows:

93-100 A	90-92 A-	87-89 B+	83-86 B	80-82 B-
77-79 C+	70-76 C	60-69 D	59 and below F	

Grading criteria:

Problem sets: There will be six problem sets that focus on the statistical tests we have been working on. While the tests themselves will be run in STATA, most problem sets will require additional writing and analysis. The entire assignment should be submitted in a single Word document that is neatly and professionally formatted. **Please submit assignments via email.** You may turn in one problem set late (up to a week) without penalty. Additional late problem sets (or the first one if it is more than a week late) will only receive half credit.

Research project: The major assignment in the class is the development of an original dataset and the writing of a final paper in which you analyze that data using techniques learned in this class. There will be several memos due throughout the semester to ensure you are on track. You are encouraged

to select a topic relevant to your fields of interest with the anticipation that this dataset and paper can serve as the foundation for a dissertation chapter or side project. More details on the project requirements can be found at the end of the syllabus. I will grant a 48-hour time extension on up to two memos if you have conflicting due dates across your classes, but please inform me in advance.

Attendance: Consistent attendance is vital to success in a methods class, as each week will build on the previous week's work. We will also spend significant parts of class discussing the research design material and working through examples of the statistics material. You have one "free" absence. Additional absences will result in one-point deduction from your final grade. Late arrivals are treated as one-half of an absence. Absences are excused for medical (including university pandemic policies) and religious reasons.

CITI Training: An additional requirement for this course is that you complete human subjects training through the CITI program (Social and Behavioral Responsible Conduct of Research) if you have not already done so. See <https://research.fiu.edu/rcr/training/>. Submit your certificate to me upon completion. **This assignment is due February 24.**

Class Policies:

Academic Misconduct: Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and to honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook. Violations include cheating, plagiarism, academic negligence or dishonesty. Plagiarism results when students neglect to acknowledge in footnotes, endnotes or other forms of documentation their use of the words and ideas of others. If you have questions about what constitutes proper citation, please speak to me.

Disability Accommodations: Students with disabilities, as defined by law, have the right to receive appropriate accommodations if their disabilities make it difficult to perform academic tasks in the usual way or in the allotted time frame. However, in order to receive accommodation, students must register with the Disability Resource Center. This office will keep the student's written request, notify faculty who have a student with a disability enrolled in his or her class, and indicate what kinds of arrangements should be made. Please contact the DRC at the beginning of the semester.

Availability: Students should feel free to contact me by email with any concerns about the class or course material. I will make every effort to respond to all messages within 24 hours. Please send emails through your FIU email and check both your FIU email and Canvas daily.

Schedule for Class Topics, Readings and Assignments

January 11: Class Overview and Review of Methods I

January 18: Linear Regression: Specification (Problem Set #1 due January 16)

Readings: Pollock (Essentials), Chapter 8 and Pollock (Companion), Chapter 8

January 25: Linear Regression: Interpretation (Memo #1 due January 23)

Readings: Pollock (Companion), Chapter 9

February 1: Linear Regression: Diagnostics I

February 8: Linear Regression: Diagnostics II (Memo #2 due February 6)

February 15: Linear Regression: Interactive Models (Problem Set #2 due February 13)

February 22: The Writeup; Data Transformation (CITI Certification due February 24)

March 1: NO CLASS (Spring Break)

March 8: Logistic Regression: Specification (Problem Set #3 due March 6)

Readings: Pollock (Companion), Chapter 10

March 15: Logistic Regression: Interpretation (Problem Set #4 due March 13)

March 22: Logistic Regression: Diagnostics (Memo #3 due March 20)

March 29: Logistic Regression: Interactions

April 5: Ordered Logistic Regression Models (Problem Set #5 due April 3)

April 12: Multinomial Logistic Regression Models (Memo #4 due April 10)

April 19: Research Ethics (Problem Set #6 due April 17)

April 28: Final Papers Due

Research Project Instructions

Topics: You may choose any political science topic amenable to quantitative analysis (i.e. not a topic in political theory). You will develop a research question and two hypotheses early in the semester, although these may be adjusted as the semester progresses. You will not produce a *written* literature review, but do *conduct* one: I expect that the ideas for your project are novel in some way and that you are familiar enough with the literature to know how other scholars have tackled this question.

Dataset: I expect your dataset to include some original data collection and that it is not solely based on the use of existing data sources. You may, however, append new data to an existing dataset. We will discuss what this means in the context of your individual project during one-on-one meetings.

Sample and Variables: Your sample should have at least 200 observations. Your dataset must have two versions of the dependent variable: one that is interval-level and one that is a binary outcome. Your dataset should have **five** independent variables (including two which test your hypotheses) and those variables must include an interval, ordinal, polychotomous and dummy variable.

Memos and Intermediate Reports:

1. *Research topic memo:* In this memo, you will identify a research question and preliminary hypotheses, dependent and independent variables (at the conceptual level) and brainstorm different ways to measure these key concepts and anticipate challenges regarding data collection. After I review these memos, we will meet individually to discuss your proposal.

2. *Research design memo:* In your second memo, you will finalize the decisions discussed in your first memo. You should provide me with the following information: (1) the unit of analysis; (2) the nature of the sample (data sources and case selection); (3) the operationalization of each variable.

3. *Complete dataset and codebook:* In your third report, you will submit the STATA dataset that you will use for your analysis. Your dataset should follow best practices regarding dataset construction, variable names, labels, codebook. No separate memo is required.

4. *Model code:* In your final report, you will provide an annotated STATA .do file that executes the analyses that will appear in your paper (descriptive statistics, regression models, diagnostics, and substantive interpretation). Your annotations should be sufficient that I understand what all statistics and models are and how they fit into your analysis. No separate memo is required.

5. *Final paper:* Your final paper should be formatted like the “Methods” and “Results” sections of a quantitative journal article, as modeled in class. The paper should include descriptions of all variables, descriptive and bivariate analyses, and interpretation of linear and logistic regression models. Papers are typically around 12-15 pages double-spaced, including tables and figures.

Please note: After each memo, revisions may be necessary, and I expect you to complete these within a week. For the third memo, it is especially essential that you move rapidly toward finalization of the dataset. If your dataset requires revisions (or if it is submitted late), **all revisions must be complete by April 1. This is a hard deadline.** If your dataset is not 100% complete by this date, I will provide you a dataset for your final paper and you will receive a zero for your dataset.