RPOS517: Empirical Data Analysis

Syllabus - Spring 2010

Class meets Wednesdays 12-3 in Milne 215

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Office Hours: Wed. 11-12, and by appointment

I. Overview:
The purposes of this course are to provide students with useful tools for engaging in empirical research in political science and public policy and to help students understand literature that uses quantitative research. Students will learn how to think about theoretical problems in terms of statistical models - hypothesis testing, OLS regression models, logit, and some extensions.

STATA - We will make good use of STATA, which is available on university computers throughout campus. It will be an essential component of the course.

Blackboard - You can access class information on-line. I will make as extensive use of Blackboard as possible --- assignments, online discussions, lectures, and data sets, will be made available on Blackboard. Also, check for messages and announcements.

II. Required and Recommended Texts
This course has one required textbook:


Additional readings from PoliSci journals and other resources will be assigned through the term. In addition, there is a wealth of literature about STATA.

III. Course Requirements

- Assignments and Presentations:
  Assignment 1: March 24 – 18% of final grade.
  Assignment 2 + Class Presentation: April 28 – 28% of final grade.
  Students are encouraged to help each other with assignments but each assignment must be an individual effort. Students handing in assignments that are too similar will receive grades of 0. Assignments are to be handed in at the beginning of the class session for which they are due. When possible, students are encouraged to submit an electronic copy of the assignment, rather than submit a hard copy. Just like the hard copy, the e-copy is due at the beginning of the class session. Electronic submission is possible via Blackboard or email.

- Article Review:
  Article Review: April 7 – 8 % of final grade.

- Midterm Exams:
  1st Mid-term exam: February 24 In Class – 23% of final grade.
  2nd Mid-term exam: April 14 in class – 23% of final grade.

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services. Students requiring emergency evacuation are encouraged to discuss their needs with their professor and Disability Support Services.
Goals:
1. By the end of the semester, you will be able to read regression tables in scholarly journals and comprehend the analyses (consumer).
2. You will be able to make sense of the assumptions of regression analysis, and use this knowledge to critically think about published research.
3. You will have the capability to produce analysis for quantitative research using OLS regression and logit (producer).
4. You will master the concept of hypothesis testing and be able to apply it to regression analysis both as a producer and as a consumer.
5. You will be able to evaluate the empirical research of your peers and of other scholars.
6. You will learn how to effectively present and interpret the results of your analysis.
7. You will master basic use of STATA and will have the ability to use .do files for your analysis.
8. You will be able to plan and execute a complete research project - starting with developing a theory, generating hypotheses, testing them empirically, and interpreting the results.
9. You will learn to locate, analyze, synthesize and communicate information from the Internet relevant to data analysis.

Useful Websites:
http://www.stata.com/ - the Stata website
http://polmeth.wustl.edu/ - The Society for Political Methodology
http://wps.aw.com/aw_studenmund_useecon_5/ - the textbook’s website (includes datasets)
IV. Class Schedule and Readings (note: additional readings may be added)
Reading assignments should be completed before the class for which they are assigned.

Week 1: January 20  General introduction, syllabus
Week 2: January 27  Topic: Math Refresher
Week 3: February 3  Topic: Ordinary Least Squares; Introduction to Regression Analysis
                   Reading: Studenmund, Chapters 1 & 2.
Week 4: February 10 Topic: Using Regression
                   Reading: Studenmund, Chapter 3.
Week 5: February 17 Topic: OLS & Regression Assumptions
                   Reading: Studenmund, Chapter 4.
Week 6: February 24 1st MIDTERM EXAMINATION (Tentatively set for February 24)
Week 7: March 3  Topic: Hypothesis Testing in Regression
                   Reading: Studenmund, Chapter 5
Week 8: March 10 Topic: Hypothesis Testing II
                   Reading: Studenmund, Chapter 5.
                   IDEA + DATA for 2nd ASSIGNMENT DUE
Week 9: March 17 Topic: Choosing Independent Variables, Multicollinearity
                   Reading: Studenmund, Chapters 6, 8.
Week 10: March 24 Topic: Functional Form, Dummy Variables and Interactions
                   Reading: Studenmund, Chapter 7.
                   1ST ASSIGNMENT DUE
Week 11: March 31 – classes suspended
Week 12: April 7  Topic: Interactions II, Serial Correlation and Heteroskedasticity
                   Reading: Studenmund, Chapters 7, 9, 10.
                   ARTICLE REVIEW DUE
Week 13: April 14 2nd MIDTERM EXAMINATION (Tentatively set for April 14)
Week 14: April 21 Topic: Dichotomous Dependent Variables: Logistic Regression
                   Reading: Studenmund, Chapter 13.
Week 15: April 28 CLASS PRESENTATIONS + 2ND ASSIGNMENT DUE

V. Extras
This class requires a lot of work by the student. Missing classes or falling behind in the readings and homework assignments will severely limit student success. It is extremely difficult to cram for statistics, so be sure to keep up.
Also, three hours of statistics at a time can be tedious! Having read the information before class will make class time much easier.
Written work must be submitted on time. Late work receives a penalty of half a letter grade for every day it is late beginning the day it is due.