POS 7745: Advanced Quantitative Methods in Political Research

Fall 2017

Thursday 2:00-4:50 pm, HPH 409

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Office Hours: Tuesday 1:00-3:00 PM & Thursday 10:30 AM-12:30 PM; or by appointment

This course is on advanced topics in the use of statistical methods with emphasis on applications in political science research. The course extends on the linear model by focusing on a) problems in regression, and b) nonlinear models known as generalized linear models or maximum likelihood models. What to do when the formal assumptions of the standard linear regression model are violated? How to modify the standard linear model to accommodate a broader class of outcome variables?

The students will explore the tools used in current quantitative research in political science and learn how to use the software to apply this methodology to the analysis of political phenomena.

REQUIRED TEXT

Gujarati, Damodar N. 2009. *Basic Econometrics*. 5th Edition. McGraw Hill.

Additional readings will be distributed in class.

RECOMMENDED TEXT

Hamilton, Lawrence C. 2013. *Statistics with STATA*: *Version 12*. 8th Edition. Brooks/Cole Cengage Learning.

OPTIONAL TEXTS

Kennedy, Peter. 2008. *A Guide to Econometrics*. 6th Edition. Wiley-Blackwell.

Gill, Jeff. 2006. *Essential Mathematics for Political and Social Research.* Cambridge University Press.

Fox, John. 1991. *Regression Diagnostics*. *An Introduction*. Sage Publications Inc.

DATABASES

Library Website: http://guides.ucf.edu/SecurityStudies, 'Databases' tab

ICPSR Inter-University Consortium for Political and Social Research. Find & Analyze Data. http://www.icpsr.umich.edu/icpsrweb/ICPSR/

Stockholm International Peace Research Institute (sipri). http://www.sipri.org/ Databases.

Correlates of War. Available Datasets. http://www.correlatesofwar.org/

Paul Hensel's International Relations Data Site. Paul R. Hensel. University of North Texas. http://www.paulhensel.org/data.html

Council of European Social Science Data Archive. Accessing Data. http://www.cessda.org

Comparative Study of Electoral Systems. Other Comparative Projects. http://www.cses.org/about.htm

SOFTWARE

The software for this course is STATA. Laboratory sessions will introduce students to the software and provide time to address questions related to the weekly class sessions and assignments and final research project.

RECORDING ACADEMIC ACTIVITY POLICY

As of Fall 2014, all faculty members are required to document students' academic activity at the beginning of each course. In order to document that you began this course, please complete the assignment described below and submit it in Canvas at the end of the first week of classes, or as soon as possible after adding the course, but **no later than August 25**. To access POS 7745 in Canvas login with your NID and NID password in myUCF portal (https://my.ucf.edu). Failure to do so will result in a delay in the disbursement of your financial aid.

Canvas assignment:
Describe the data collection and analysis results of the research exercise you conducted during the PhD Summer Methodology Workshop, August 11-18 (your assignment should be no longer than one page).

COURSE REQUIREMENTS:

Weekly assignments (35%). There will be an assignment distributed at the end of class each week that will be due at the beginning of the class the following week (that is you will have one week to complete the assignment). These assignments are designed to provide students with hands-on experience on the material we are covering in class each week.

Research project (50%). This is the central goal of the course. The general idea of this project is to formulate a research question of interest to you, collect data, and use statistical analytical tools to investigate the question. Your research project must be at least 18 pages long, not including tables, figures, and references.

A research proposal (at least 2 pages long) is due on (*week 8:* ***Thursday, October 12***). Your research proposal should describe briefly the research question and its theoretical significance, and the data and methodology you will be using in your analysis. You should set an appointment to meet with the instructor at least a week prior to submitting your proposal to discuss your paper topic.

The research paper is due on ***Monday, December 4, by 5 PM.***

Class presentations and discussion (15%). You will be required to present your research (research question, theoretical motivation, analysis, and findings) to the class. Each presentation will be 15-20 minutes long. You should send the draft of your paper to your colleagues at least one week prior to your presentation so that they are prepared to ask you questions and comment on your paper.

The plus/minus grading system will apply in this course.

TENTATIVE COURSE SCHEDULE

Note: ***This schedule is subject to change depending on the needs of the class.***

Week	Topic	Reading
Week 1 **Aug 24**	Introduction	
Week 2 **Aug 31**	Review of Elements of Research Design Review of the Linear Model	Biddle, Stephen and Stephen Long. 2004. "Democracy and Military Effectiveness: A Deeper Look." *The Journal of Conflict Resolution* 48 (4):525-546. Gujarati, chapters 1-3
Week 3 **Sept 7**	Multivariate Regression	Gujarati, chapter 7
Week 4 **Sept 14**	Uncertainty, Inference, and Hypothesis Testing	Gujarati, chapters 5 & 8 Gary King and Eleanor Neff Powell. 2008. "How Not to Lie Without Statistics, http://gking.harvard.edu/files/abs/nolie-abs.shtml
Week 5 **Sept 21**	Dummy Variables Multiplicative Interaction Terms	Gujarati, chapter 9 Robert J. Friedrich. 1982. In Defense of Multiplicative Terms in Multiple Regression Equations. *American Journal of Political Science*. 26(4): 797-833 Timothy Hellwig and David Samuels. 2007. Voting in Open Economies: The Electoral Consequences of Globalization. *Comparative Political Studies*. 40(3): 283-306.
Week 6 **Sept 28**	Multicollinearity	Gujarati, chapter 10
Week 7 **Oct 5**	Heteroskedasticity	Gujarati, chapter 11
Week 8 **Oct 12**	Autocorrelation Design for research project due	Gujarati, chapter 12

Week 9 Oct 19	Model Specification & Diagnostics	Gujarati, chapter 13
Week 10 Oct 26	Qualitative Response Models	Gujarati, chapters 15
Week 11 Nov 2	Cross Sectional, Longitudinal Models	Gujarati, chapter 16
Week 12 Nov 9	Time Series Analysis	Gujarati, chapter 21
Week 13 Nov 16	CLASS PRESENTATIONS	
Week 14 Nov 23	***Thanksgiving***	No Class
Week 15 Nov 30	CLASS PRESENTATIONS	
Week 16 Dec 4		**Research Project Due Monday, December 4**