POS 7745: Advanced Quantitative Methods in Political Research

Fall 2013

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

Professor: Barbara Sgouraki Kinsey
Office: ***Orlando***: Phillips Hall 311H
Cocoa: Suite 222; Room 225
Phone: Orlando: (407) 823-2608; Cocoa: (321) 433 -7962
Email: barbara.kinsey@ucf.edu
Office Hours: ***Orlando***: Tuesday Noon – 1:00 PM & Thursday 10:00 - Noon;
Cocoa: Monday 3:00-5:00 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 TEXTS

Gujarati, Damodar N. 2003. *Basic Econometrics*. 4th Edition. McGraw Hill.

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

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

Additional readings will be distributed in class.

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.

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.

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 (in other words, 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, October 10*). 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 ought to set an appointment to meet with the instructor at least a week prior to submitting your proposal to discuss your paper topic.

The research project is due on ***Thursday, December 5, 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 minutes long. You ought to 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 22**	Introduction	
Week 2 **Aug 29**	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 Fox, chapter 2
Week 3 **Sept 5**	Multivariate Regression	Gujarati, chapter 7 Fox, chapter 4
Week 4 **Sept 12**	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 19**	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 26**	Multicollinearity	Gujarati, chapter 10
Week 7 **Oct 3**	Heteroskedasticity	Gujarati, chapter 11 Fox, chapter 6
Week 8 **Oct 10**	Autocorrelation <u>Design for research project due</u>	Gujarati, chapter 12
Week 9 **Oct 17**	Time Series Analysis	Gujarati, chapter 21
Week 10 **Oct 24**	Model Specification & Diagnostics	Gujarati, chapter 13 Fox, chapter 10
Week 11 **Oct 31**	Non-Linear Models	Gujarati, chapters 6 & 14 Fox, chapter 7
Week 12 **Nov 7**	Qualitative Response Models	Gujarati, chapter 15 Gary King and Langche Zeng. 2001. Explaining Rare Events in International Relations, *International Organization* 55(3): 693-715
Week 13 **Nov 14**	Cross Sectional, Longitudinal Models CLASS PRESENTATIONS	Gujarati, chapter 16
Week 14 **Nov 21**	CLASS PRESENTATIONS	
Week 15 **Nov 28**	***Thanksgiving***	No Class
Week 16 **Dec 5**		Research Project Due