POS 7745: Advanced Quantitative Methods in Political Research

Fall 2018

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?

By the end of the course students will be familiar with the tools used in current quantitative research in political science and know how to use statistical 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 24**. 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 10-17 (your assignment should be no longer than one page).

COURSE REQUIREMENTS

Weekly assignments (40%). 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 (45%). 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 18***). 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 3, by Midnight***

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 23**	Introduction	
Week 2 **Aug 30**	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 6**	Multivariate Regression	Gujarati, chapter 7
Week 4 **Sept 13**	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 20**	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 27**	Multicollinearity	Gujarati, chapter 10
Week 7 **Oct 4**	Heteroskedasticity	Gujarati, chapter 11
Week 8 **Oct 11**	Autocorrelation	Gujarati, chapter 12

Week 9 **Oct 18**	Model Specification & Diagnostics **Design for research project due**	Gujarati, chapter 13
Week 10 **Oct 25**	Qualitative Response Models	Gujarati, chapters 15
Week 11 **Nov 1**	Cross Sectional, Longitudinal Models	Gujarati, chapter 16
Week 12 **Nov 8**	Time Series Analysis	Gujarati, chapter 21
Week 13 **Nov 15**	CLASS PRESENTATIONS	
Week 14 **Nov 23**	***Thanksgiving***	No Class
Week 15 **Nov 29**	CLASS PRESENTATIONS	
Week 16 **Dec 3**	**Research project due**	

STUDENT ACCESSIBILITY

The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need disability-related access in this course should contact the professor as soon as possible. Students should also connect with Student Accessibility Services (SAS) <http://sas.sdes.ucf.edu/> (Ferrell Commons 185, sas@ucf.edu, phone 407-823-2371). Through Student Accessibility Services, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential access and accommodations that might be reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student.

CAMPUS SAFETY STATEMENT

To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to ucf.edu and logging in. Click on “Student Self Service” located on the left side of the screen in the toolbar, scroll down to the blue “Personal Information” heading on the Student Center screen, click on “UCF Alert”, fill out the information, including e-mail address, cell phone number, and cell phone provider, click “Apply” to

save the changes, and then click “OK.” Students with special needs related to emergency situations should speak with their instructors outside of class.

VIRUSES

A virus can spell disaster. Your use of a reputable anti-virus program is a requirement for participation in this course (good ones include McAfee or Norton).

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