POLI 211: Quantitative Analysis of Political Data, II
(Spring 2013)

Course Description:

This course provides an in-depth introduction to ordinary least squares (OLS) regression analysis and its use in political science. This course represents an important first step towards being able to interpret, critique, and conduct regression analyses of political data. Much of the course will focus on the assumptions underlying OLS regression, the implications of violations of these assumptions, and solutions to these violations.

Intended Student Learning Outcomes (SLOs):

At the end of this course, students should:

1. Have a thorough understanding of the assumptions, limitations, extensions, and applications of regression analysis in political science. (corresponds with PLOs 3 and 5)
2. Demonstrate an ability to use the tools of regression analysis to test hypotheses and appropriately model political phenomena. (corresponds with PLOs 3 and 5)

General Program Learning Outcomes (PLOs) for the Political Science Graduate Emphasis:

1. A comprehensive graduate-level understanding of processes, theories, and empirical regularities in the student’s major area of emphasis (Political Institutions and Political Economy or Political Cognition and Behavior).
2. A graduate-level understanding of processes, theories, and empirical regularities in the student’s minor area of emphasis (Political Institutions and Political Economy or Political Cognition and Behavior).
3. Competency with contemporary social science methods used to conduct rigorous research on political phenomena.
4. Effective scientific communication skills, especially the ability to convey complex concepts and information in a clear and concise manner.
5. The ability to initiate and conduct independent research that makes an original contribution to political science knowledge of a quality that can be published in a peer reviewed outlet.

Prerequisite:

POLI 210 (Quantitative Analysis of Political Data, I) is a prerequisite for this course.
Requirements:

1. There will be homework assignments that require you to apply the concepts and tools learned in class to real political data. In order to complete these homework assignments, you will need access to Stata. These assignments are based on the assumption that you have a working familiarity with this software. These assignments will constitute 50% of your grade for the course.

2. You will write an original research paper in which you identify an interesting research question, provide a theoretical answer to the question you pose, test your theoretical expectations by utilizing OLS regression to analyze relevant data (while demonstrating sensitivity to the assumptions of OLS), and interpret the results. Your paper should be the length of a short article (i.e., 15-20 pages) and should approach the quality of a paper that could be presented at a political science conference. I require that you meet with me to talk with me about your paper topic by the fourth week of the semester. Your paper will represent 45% of your course grade.

3. Students will present their papers at the end of the semester. We will emulate a conference setting, which means that each of you will get approximately 10-15 minutes to present your paper. I will invite other members of the faculty to join us, hear your presentations, and hopefully ask questions. Your presentation will be worth 5% of your course grade.

Readings:

Required:


Additional required readings are listed below and will be posted on UCMCrops under “Resources.”

Recommended:


Additional recommended readings are listed below.
Class Schedule:

1/22:  Review of the basic two variable OLS model

Required:
Gujarati, Introduction, Chapters 1 and Chapter 2

1/29:  Estimation and an introduction to multiple regression

Required:
Gujarati, Chapters 3, 4, and Sections 7.1 - 7.4 of Chapter 7

2/5:  Hypothesis testing

Required:
Gujarati, Chapter 5 and Sections 8.1 - 8.6 of Chapter 8

Recommended:


2/12:  Model fit, predicted values, and residuals

*** Assignment 1 is due ***

Required:
Gujarati, Sections 7.5 - 7.8 of Chapter 7.

2/19:  Model specification I (linearity, dummy variables)

Required:
Gujarati, Chapter 9

Recommended:
2/26: Model specification II (interaction terms)

*** Assignment 2 is due ***

Required:

Gujarati, Chapter 15


3/5: Model specification III (omitted variables, picking the “best” model)

Required:

Gujarati, Chapters 13 and 14.

3/12: Outliers and selection problems

*** Assignment 3 is due ***

Required:


Recommended:


3/19: Multicollinearity and heteroscedasticity

Required:

Gujarati, Chapters 10 and 11.

Recommended:


4/2: Autocorrelation

*** Assignment 4 is due ***
**Required:**

Gujarati, Chapter 12

**Recommended:**


**4/9: Time series models**

**Required:**

Gujarati, Chapters 17 and 21

**Recommended:**


**4/16: Panel data models**

*** Assignment 5 is due ***

**Required:**

Gujarati, Section 15.12 in Chapter 15.


Recommended:


4/23: Causal inference issues

Required:


Recommended:

Gujarati, Chapters 18, 19, and 20.


4/30: Intro to MLE and limited dependent variable models

*** Assignment 6 is due ***

Required:

Gujarati, Chapter 16.

Recommended:


5/7: Student Presentations