

POLS 5302 – SEMINAR IN QUANTITATIVE RESEARCH METHODS II

Wednesdays: 6:00 – 8:50 pm in LART 403

INSTRUCTOR: Dr. Rebecca A. Reid
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OFFICE: 307 Benedict Hall
OFFICE HOURS: MW 4:30-6:00 pm, or by appointment

COURSE DESCRIPTION

This course further explores methods of quantitative analysis and hypothesis testing, including data management, various regression estimation methods, diagnostic techniques, and other topics. In this class, students will learn how to analyze a variety of quantitative data and are expected to complete an original, conference-worthy research paper. We will focus upon OLS regression, Gauss-Markov assumptions, maximum likelihood estimation techniques, and appropriate diagnostic tools. We will be working primarily with STATA, although students may use R upon personal preference.

Prerequisite: POLS 5300 or equivalent course with a minimum grade of "B" or better.

UTEP EDGE

This course encompasses activities associated with UTEP EDGE, including (1) problem-solving and (2) critical thinking through class discussion, applied methodological homework, and research experience. This course enables and requires (3) research and scholarly activity, as well as (4) creativity in that assignments challenge students to think in innovative ways to produce original arguments and evaluate problems. (5) Teamwork is encouraged through homework assignments, where students aid each other to learn, execute, and apply class material. Finally (6) communication is emphasized through the completion of the original research paper, where conveying and explaining the theoretical arguments, methodologies, and quantitative results are crucial.

LEARNING OUTCOMES

Over the course of the semester students will have:

- An understanding of how to generate research questions and appropriate research designs, research techniques, data collection, measurement/operationalization, and data analysis
- Learned to execute appropriate, advanced statistical analysis (including using statistical software)
- Developed their ability to digest and critically/analytically evaluate political science and social science research

REQUIRED READING

- Gujarati, Damodar N., and Dawn C. Porter. 2009. *Basic Econometrics*. Fifth Edition. McGraw-Hill.

RECOMMENDED READING

- Kennedy, Peter. 2008. *A Guide to Econometrics*. Sixth Edition. Wiley-Blackwell.
- King, Gary, Robert R. Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton University Press.
- Gailmard, Sean. *Statistical Modeling and Inference for Social Science*. Cambridge University Press.
- Gill, Jeff. *Essential Mathematics for Political and Social Research*. Cambridge University.
- Kropko, Jonathan. 2016. *Mathematics for Social Scientists*. Sage Publishing.
- Acock, Alan C. 2016. *A Gentle Introduction to Stata*. Fifth Edition. Stata Press.

COURSE REQUIREMENTS AND GRADING

Evaluation in this course will be based on the following components:

Participation/Attendance	10%
Homework Assignments	15%
Lowest Exam Score	10%
Exam	15%
Final Exam	20%
Final Research Paper	30%

The grading scale is as follows:

90-100	A
80-89	B
70-79	C
60-69	D
59 and below	F

Participation: Attendance and participation are essential. Students are responsible for offering their thoughts, opinions, and questions without solicitation from the instructor. Needless to say, these thoughts should have merit and be based upon the readings.

Examinations: There will be 3 take home examinations during the course. All exams are **cumulative** and will cover material learned in the class lectures, assignments, discussion, and the assigned readings. As a general rule, **make up exams will NOT be offered**; although make up exams will be permitted only under the gravest of

circumstances, and I reserve the right to determine whether a make up exam is offered to individuals based upon their situation and timely request. I reserve the right to alter the questions for make up exams.

As these exams are take-home, students may use whatever resources they need to complete the assignments. However, these sources must be cited and included in the references for each exam. Each exam must be typed and either emailed to me or turned in under my office door/left at my mailbox in the department office. Plagiarized work and collusion will receive a failing grade (see Academic Dishonesty below), and I will not accept late submissions. Each exam must be completed individually.

Homework Assignments: Students are required to turn in their homework assignments. While such assignments may be completed in a group setting, all assignments must be the individual student's original work. As such, students may not borrow, copy, or plagiarize from other students' work (or any other source). Any work that is plagiarized will receive a 0 on the assignment (see Academic Dishonesty below). Hence, students working in groups should ensure that each assignment is reflective of individual work.

Research Paper: Due on the last day of class, students must submit a typed, hard-copy, roughly 15-20 page research paper on original research. References and in-text citations must be included; references and graphs/tables are not included within the page limitations. This paper will be evaluated on clarity and specification of the research question and theoretical argument, the synthesis of the literature review, the appropriateness of the research design and methods, the quality of the statistical analysis, the proper interpretation of results, the presence and quality of diagnostic analyses, and writing quality, such as organization, clarity, spelling, and grammar. I welcome the submission of drafts to me prior to the deadline for revisions and feedback. **No late work is accepted.**

SPECIAL ACCOMODATIONS

If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass. *CASS' Staff are the only individuals who can validate and if need be, authorize accommodations for students with disabilities.*

ACADEMIC DISHONESTY

Absolutely no form of academic dishonesty will be tolerated. The University of Texas at El Paso prides itself on its standards of academic excellence. In all matters of intellectual pursuit, UTEP faculty and students must strive to achieve excellence based on the quality of work produced by the individual. In the classroom and in all other academic activities, students are expected to uphold the highest standards of academic integrity. Any form of scholastic dishonesty is an affront to the pursuit of

knowledge and jeopardizes the quality of the degree awarded to all graduates of UTEP. It is imperative, therefore, that the members of this academic community understand the regulations pertaining to academic integrity and that all faculty insist on adherence to these standards.

Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, and any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures (HOP) and available in the Office of the Dean of Students and the homepage of The Dean of Students at www.utep.edu/dos, may result in sanctions ranging from disciplinary probation, to failing a grade on the work in question, to a failing grade in the course, to suspension or dismissal, among others.

UNIVERSITY WRITING CENTER

The University Writing Center is a useful tool each of student should take advantage of in for all written/paper assignments. While not required, your paper will be improved following a consultation with the staff. The staff sees students through appointments or walk-ins, though appointments are preferred. For more information, go to: <http://uwc.utep.edu/index.php/hours-location>. For appropriate assignments, such as your research paper, I offer up to 10 points extra credit if you consult the writing center. In order to be eligible for this credit, you must show evidence of your consultation and evidence of the revisions suggested and those you made. You must also provide a reflection as to what you learned from the experience (for instance, what types of errors do you systematically make and how can you correct them). Hence, credit will only be possible with adequate evidence and thoughtful reflection of the writing and revision process.

COUNSELING AND PSYCHOLOGICAL SERVICES

The center, located at 202 Union West, offers confidential counseling services in English or in Spanish. They also provide group and individual counseling for currently enrolled UTEP students. For more information, go to: <https://www.utep.edu/student-affairs/counsel/>.

ADELANTE CHILD DEVELOPMENT CENTER

Child care is available for children of all students of the University. The Adelante Child Development Center is located at 314 W. Schuster and is managed and operated by Adelante Childcare, Inc. Children aged three months to 12 years are accepted, depending on space availability (Hourly, daily and weekly care are available and the Center offers a Summer Camp for school-age children). Age-appropriate early childhood developmental programs are offered in the curriculum. The Adelante Child Development Center is licensed by the Texas Department of Protective and Regulatory Services. Financial

assistance is available for qualifying parents through Child Care Services. For more information, please call: **915-532-1114** or contact: studentaffairs.utep.edu/childcare. If, for any reason, you cannot find a care-taker for your child(ren), you are welcome to bring them to class.

GENERAL EXPECTATIONS

I expect all students to behave professionally in this class. You will be held responsible for all material covered in the textbooks, articles, videos, and the class discussions. If you miss a class, you are still responsible for the content of that day's information. I will not tolerate disruptive behavior, including (but not limited to) inappropriate computer use, reading newspapers, talking during lectures, using cell phones or pagers, and disrespecting classmates or the instructor. Additionally, I expect all students to attend class prepared and to show up on time. It is disrespectful to the instructor and the other students when individuals show up late or are not prepared to participate in the class discussion. I allow the use of laptops for class purposes only; however, should laptop usage become disruptive, I reserve the right to prohibit laptops and other electronic devices.

This class is designed to provide information and challenge students with new, and sometimes controversial, ideas and arguments. This class is designed to be a safe, open environment to express ideas, arguments, and opinions for learning purposes. This class does not *give* you knowledge—i.e. knowledge and understanding is not transfused to students by simply sitting in class. Learning is an interactive process that is the primary responsibility of each student.

Late assignments will receive no credit.

All grades are earned and reflect your reflect the mastery of material through the adequate completion of assignments by their deadline. As such, they do not reflect level of effort, interest, or intention. As a general policy, I do not offer incompletes, and **I will not change final grades for the course under any circumstances,** with the single exception of where an error occurred on my part.

COURSE SCHEDULE

The following is a list of topics to be covered at each class meeting, and the readings which should be completed in order to fully participate in class that day. You are required to read the material prior to the class. *Literature not included in the textbook but listed on syllabus are the responsibility of students to locate (online) and read.* Academic articles can often be found via the UTEP library's website under the "Articles and Database" tab, where you can search repositories like JSTOR and Sage as well as individual journal titles. Finally, while I give specific days on which certain topics will be discussed, the calendar is subject to change. Any alterations to the course schedule will be clearly announced. As a general rule, the course will follow this order of topics, regardless of date changes, unless otherwise announced.

January	23	Introduction: Causal Inference and Theory <i>Reading due: Introduction, Chapter 1</i>
	30	Bivariate Regression and Assumptions <i>Reading due: Chapter 2,3,4</i>
February	6	Hypothesis Testing <i>Reading due: Chapter 5, 6</i> <u>Research Question due</u>
	13	Multiple Regression <i>Reading due: Chapter 7, 8</i> Ray, James Lee. 2003 "Explaining Interstate Conflict and War: What Should Be Controlled For?" <i>Conflict Management and Peace Science</i> 20 (2): 1- 31.
	20	Dummy Variables <i>Reading due: Chapter 9</i> Bratton, Kathleen A., and Kerry L. Haynie. 1999. "Agenda Setting and Legislative Success in State Legislatures: The Effects of Gender and Race," <i>The Journal of Politics</i> 61 (3): 658-679. <u>Homework 1 due</u> Take Home Exam 1 Due February 25th by 5 pm
	27	Assumptions: Multicollinearity and Heteroscedasticity <i>Reading due: Chapter 10, 11</i>

March

6

Assumptions: Autocorrelation and Model Specification

Reading due: Chapter 12, 13

Clarke, Kevin. 2005. "The Phantom Menace: Omitted Variable Bias in Econometric Research." *Conflict Management and Peace Science* 22 (Winter): 341- 352.

Research Data and Theory due

13

Linearity, LPM, and Logit/Probit Models

Reading due: Chapter 14, 15

King, Gary, and Langsche Zeng. 2001. "Logistic Regression in Rare Events Data." *Political Analysis* 9 (2): 137- 163.

Mitchell, Sara McLaughlin, Jonathan J. Ring, and Mary K. Spellman. 2013. "Domestic Legal Traditions and States' Human Rights Practices." *Journal of Peace Research* 50 (2): 203-217.

Chunrong Ai, Edward C. Norton. 2003. "Interaction Terms in Logit and Probit Models." *Economics Letters* 80 (1): 123-129

Homework 2 due

20

Spring Break

27

Event Count and Survival/Duration Analysis

Reading due: Chapter 15 (pg. 576-590)

Bell, Sam, Patricia Blocksome, Kevin Brown, and Amanda Murdie. 2017. "Help or Hindrance? The Role of Humanitarian Military Interventions in Human Security NGO Operations." *International Political Science Review*. TBA.

Box-Steffensmeier, Janet M., and Christopher Zorn. 2001. "Duration Models and Proportional Hazards in Political Science." *American Journal of Political Science* 45 (October): 972- 988.

Homework 3 due

April

3

Panel Data

Reading due: Chapter 16

Beck, Nathaniel, and Jonathan N. Katz. 1995. "What to Do (and Not to Do) with Time-Series—Cross-Section Data," *American Political Science Review*, 89: 634-647.

Beck, Nathaniel. 2001. "Time-Series-Cross-Section Data: What Have We Learned in the Past Few Years?" *Annual Review of Political Science* 4: 271- 293.

Arceneaux, Kevin, and David Nickerson. 2009. "Modeling Certainty with Clustered Data: A Comparison of Methods." *Political Analysis* 17 (2): 177- 190.

Simmons, Beth. 2009. "Civil Rights in International Law: Compliance with Aspects of the 'International Bill of Rights'." *Indiana Journal of Global Legal Studies* 16 (2): 437-481.

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Autoregressive Models

Reading due: Chapter 17

Achen, Christopher. 2000. "Why Lagged Dependent Variables Can Suppress the Explanatory Power of Other Independent Variables." Paper for APSA annual meeting.

Take Home Exam II
Due April 8th by 5 pm

17

Simultaneous Equations

Reading due: Chapter 18, 19, 20

Erikson, Robert S., and Thomas R. Palfrey. 1998. "Campaign Spending and Incumbency: An Alternative Simultaneous Equations Approach." *Journal of Politics* 60 (May): 355- 373.

Ritter, Emily Hencken and Courtenay R. Conrad. 2016. "Preventing and Responding to Dissent: The Observational Challenges of Explaining Strategic Repression." *American Political Science Review* 110 (1): 85-99.

24 **Time Series**
Reading due: Chapter 21, 22

Homework 4 due

May 1 **Time Series**

Lichbach, Mark. 1985. "Protest in America: Univariate ARIMA Models of the Postwar Era." *Western Political Quarterly* 38 (September): 388- 412.

Enders, Walter, and Todd Sandler. 1993. "The Effectiveness of Antiterrorism Policies: A Vector-Autoregression-Intervention Analysis." *American Political Science Review* 87 (December): 829- 844.

Songer, Donald R., Susan W. Johnson, Jennifer Barnes Bowie. 2013. "Do Bills of Rights Matter? An Examination of Court Change, Judicial Ideology, and the Support Structure for Rights in Canada." *Osgoode Hall Law Journal* 51 (1): 297-328.

8 Last day of class and review
Research Papers due in class

Take Home Final Exam
Due May 13th by 5 pm

Components/Organization of a Research Paper

1) Introduction

- a. Usually one or two paragraphs long and includes the research question and why this question is important/ worthy of study

2) Theory (and Literature Review)

- a. Roughly half of your paper, depending on your theoretical argument and its complexity
- b. Offer your theory and causal mechanism(s) as the main narrative, while **synthesizing** existing literature to bolster your claims, provide examples, and put your theory into context
- c. Includes your causal mechanisms and your hypotheses

3) Data and Methods

- a. Usually a page or two, discusses what sample data you have selected, its sources, and why this data is appropriate
- b. Includes the geographic and temporal limits of data (eg. United States presidential elections from 1960-2016)
- c. Discuss the operationalization of your dependent variable (i.e. tie our concept to your variable in the data and how coded, any descriptive statistics)
 - i. What is the variables
 - ii. How is this variable most appropriate for this project
 - iii. How is the variable coded
 - iv. Where does this data come from
- d. Discuss the operationalizations for each of your independent variables and controls—usually a paragraph each, including each of the aspects above
- e. Identify what type of analysis you are running and justify it (i.e. why is that specification the most appropriate)

4) Results

- a. Includes tables and figures of your results, along with substantive interpretations of the results as text and in the form of predicted probabilities or marginal effects for all statistically significant variables
- b. Identify the extent to which your hypotheses are supported or not

5) Conclusions

- a. Summarize the substantive meaning of this project's results and place within larger context
- b. Identify the limitations of the project
- c. Where should research go from here

6) References

- a. APSA style, alphabetized

How to Read and Evaluate Research (Quick Tips)

- 1) What is the research question?
- 2) What is the theoretical argument and/or thesis?
- 3) What is the dependent variable?
- 4) What are the main independent variables?
- 5) Do the variables match the theory? Are they appropriate? Do they measure what the authors claim?
- 6) What data is utilized and is it appropriate?
- 7) Did the authors include all relevant variables and exclude irrelevant variables? Are there confounding variables? Are there omitted variables?
- 8) What method of analysis was employed? Qualitative or quantitative? Is this method appropriate for the research question?
- 9) What are the results? How strong are these results?
- 10) What are the limitations of the theory, methods, and results?
- 11) How generalizable are the results?
- 12) How persuasive is the article? Why?

Homework #1

Download the NES data (1990-2000) and codebook (available on Blackboard an online), and complete the following tasks.

1. Isolate the dataset so that the only years included are 1990-2000.
2. Examine the influences on the liberal-conservative feeling thermometer (vcf0801), using the following independent variables:
 - Age group (vcf0102)
 - Gender (vcf0104)
 - Race (vcf0105)
 - Religion (vcf0128)
 - Education (vcf0140)
 - Party identification (vcf0301)
3. Describe your data using cross-tabulations, summary statistics, and/or graphs (whichever is appropriate) of the independent variables and the dependent variable. What conclusions can you draw about the appropriate model specification?
4. Estimate an OLS multivariate regression model and report the results in appropriate table format (i.e. do not just include STATA output). Explain the substantive conclusions from the regression.
5. Perform the appropriate diagnostic tests, and explain the conclusions you draw from these tests. Is your model properly specified? If not, what additional steps are necessary (apart from developing a better theory) to improve the model?

Write up your results (no longer than 7-8 pages) and turn in to me **February 20th** by 5:00pm. Additionally, email me your do file or log file so I can replicate your results if necessary.

Homework #2

Using the model from Homework #1 (or revised OLS multivariate regression):

1. Perform the appropriate diagnostic tests, and explain the conclusions you draw from these tests. Is your model properly specified? If not, what additional steps are necessary (apart from developing a better theory) to improve the model?

Write up your results (no longer than 7-8 pages) and turn in to me **March 13th** by 5:00pm. Additionally, email me your do file or log file so I can replicate your results if necessary.

Homework #3

Using the NES Cumulative Dataset 1948-2000 (and accompanying codebook) downloaded previously, complete the following tasks.

1. Isolate the dataset so that only the years 1990-2000 are included.
2. Examine influences on the presidential vote for each respondent (vcf0704a), using ALL of the following independent variables: Age Group (vcf0102), Gender (vcf0104), Race (vcf0105), Religion (vcf0128), Education (vcf0140), Ideology (vcf0803) and Party Identification (vcf0301).
3. Estimate a logit model (including any preliminary steps necessary for a sound analysis) and report the results in appropriate table format (i.e., do not just include STATA output). Explain the substantive conclusions from the model.

Calculate the marginal effects for ALL of the variables, report these effects in an appropriate table format and provide a substantive interpretation of the coefficients.

Calculate the predicted probabilities (using CLARIFY) ONLY for those variables that are statistically significant, report the effects in an appropriate table format and provide a substantive interpretation of the coefficients. Predicted probabilities should be calculated by moving the variables of interest from their minimum to maximum levels while holding the remaining variables at their mean levels.

4. Perform the appropriate goodness-of-fit and diagnostic tests (including a residual plot), and explain the conclusions you draw from these tests. Is your model properly specified? If not, what additional steps are necessary (apart from developing a better theory) to improve the model?

Write up your results (no longer than 7-8 pages), and turn in to me on **March 27th** by 5:00pm. Email the log or do file to me so that I can replicate your work, should it become necessary.

Homework #4

Using the dataset you have acquired for your research paper, complete the following tasks.

1. Identify the appropriate dependent variable and independent variables. Describe each variable appropriately.
2. Do you include any control variables or autoregressive (lagged) variables? Should you? What are the implications?
3. What kind of data do you have? (Cross-sectional, longitudinal, panel). How do you know?
4. Based upon your data, dependent variable, and theory, what kind of model is appropriate? Explain how you know.
5. What are the appropriate diagnostic tests for this model, and why?

Write up your results (no longer than 7-8 pages), and turn in to me on **April 24th** by 5:00pm. Email the log or do file to me so that I can replicate your work, should it become necessary.