GVPT 722: Advanced Quantitative Methods for Political Science
Spring 2023

Contact Information
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Class Description
The primary goal of this course is to enhance your ability to understand, and engage in, the testing of theories via the analysis of political data. This course builds on GVPT 622 (Quantitative Methods for Political Science), which provided an introduction to statistical research methods. Thus, command of the material covered in GVPT 622, or its equivalent, is assumed.

In building your statistical skill set, it is my hope that you will use this foundation to also learn in the future new techniques that are beyond the scope of this course and that will be developed over the course of your career. To accomplish this goal, you must commit to spending considerable time with the material outside of class.

We will begin with a review of ordinary least squares regression and then move quickly to a deeper investigation of this method, including things like interactions and fixed effects. We will also do some introductory exploration into some slightly more advanced topics, such as logistic regression.

There are two required books for this course. Other assigned readings should be easily available on the internet/ELMS, or through the library's digital resources. You must also have access to statistical software to complete much of the course work. The course will feature the statistical package R, which you may download for free at the following website: https://cran.r-project.org/. You will also need R-Studio, which you can down
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Books
Real Stats by Michael A. Bailey
How to Write a Lot by Paul J. Silva
Thinking Clearly with Data by Ethan Bueno de Mesquita and Anthony Fowler

Other Books (the "chatty" books Achen mentions in his article for week 1)
Statistics for Dummies II—Don't let the name fool you. You aren't a dummy! These books can be very helpful with the basics!

The Essentials of Political Analysis. By Pollock I use this with the undergraduate class, and find it extremely useful.

A Guide to Econometrics by Peter Kennedy

Essentials of Econometrics by Damodar N. Gujarati and Dawn C. Porter

Course Requirements & Evaluation
Your final grade will reflect the sum of points earned from each of the following categories:
Midterm Exam 25%
Final Exam 25%
Problem Sets & Quizzes 20%
Short Data Analysis Papers 20%
Short Class Presentations 10%

Problem Sets
I will assign multiple problem sets throughout the semester to assess your understanding of the material, and I reserve the right to administer several short assessment quizzes (announced and/or unannounced). You should expect to receive an assignment most weeks during the semester. All problem sets must be handed in online through ELMS. All tables and graphs must be formatted professionally as they would appear in an academic journal; that is, you should never present raw computer output in a professionally formatted data analysis. I will penalize a late assignment 10 percentage points for each day it is late. I encourage you to work in groups, but all work must be your own. Students should refer to the section on academic integrity and thoroughly familiarize themselves with UMD's policies in this regard.

Short Papers
I will assign multiple short data analysis papers throughout the semester. These papers are designed to give you experience with data analysis, testing hypotheses, and writing up the results in a professional manner. And, I expect that you will take the time to craft professional tables and figures. The number (likely 3-4) and timing of the assignments will depend on the pacing of the class. All paper assignments must be formatted professionally and follow the discipline's prevailing publication standards.

Short Class Presentations
Occasionally I will ask students to find examples of some technique in the literature. They will then present this to the class in a very short presentation. By short I mean about 3 min and 3 Powerpoint slides, at most.

Exams
I will administer two exams in this course—a midterm and final—on the scheduled dates listed in the Course Schedule below. I will announce the details of each exam's format at least one week prior to the scheduled date.

Attendance
Please be aware that, as in most courses, the substantive course material builds on itself during the semester. Thus, regular attendance and study time outside of class meetings will be critical to internalize and master effectively the core concepts. If you are going to miss class on an exam day and would like your absence to be excused, you are required to email the instructor in advance of the class and to bring documentation to support your excused absence on the day you return. The new absence policy (one sick absence with a self-signed note) does not apply to days where we are scheduled to have an exam. Also, students are not permitted to take an incomplete grade in this course (with few, extraordinary exceptions).

The University of Maryland policy, entitled "Assignments and Attendance on Dates of Religious Observance," states that students should not be penalized in any way for participation in religious observances and that, whenever feasible, they be allowed to makeup academic assignments that are missed due to such absences. However, the student must personally hand the instructor a written notification of the projected absence within two weeks of the start of the semester.

Academic Integrity
Academic integrity is a core value of institutions of higher learning. The University of Maryland has a student-administered Honor Code and an Honor Pledge. The Code prohibits students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents, and forging signatures. Compliance with the code is administered by the Student Honor Council, which strives to promote a "community of trust" on the College Park campus. Allegations of academic dishonesty should be reported directly to the Honor Council by any member of the campus community. It is a student's responsibility to familiarize him/herself with this, and accordingly this course assumes that all students are thoroughly familiar with the Honor Code and Honor Pledge. The official university honor code policy is located here.

Students with Disabilities
University of Maryland is legally obligated to provide appropriate accommodations for students with documented disabilities. Students who seek special accommodations due to disabilities must first set up an appointment with the Disability Support Services (DSS) office. I will make every effort to accommodate those who register with the Disability Support Service (DSS) office and provide a University of Maryland DSS Accommodation form. I can only accommodate those who present the required written DSS documentation.

Class Schedule
The following is a tentative class and reading schedule, which is subject to change. Required readings listed each day should be completed prior to the start of class. At times, you might get frustrated, but reading ahead of class should have the overall effect of enhancing what you gain from lecture. To reinforce your understanding, I highly recommend reading the material, along with your notes, again after class. Be sure to ask questions when there is something you do not understand, or that requires further clarification.

Date	Week	Topic	Reading to Do Before Class	What's Due?
Jan 31	1	Intro/work habits	• Silva, entire book • Achen, *Political Methodologist* reading (on ELMS) • Stimpson reading (on ELMS)	Nothing
Feb 7	2	The nature of econometrics	• Bailey, chapters 1-2 • Valentino et al. (on ELMS) • BdM&F 1-3	Nothing
Feb 14	3	Regression	• Bailey, chapter 3 • Article TBA • BdM&F 4-6	Problem Set 1 (from Ch 2)
Feb 21	4	Hypothesis Testing	• Bailey, chapter 4 • BdM&F 8	Problem Set 2 (from Ch 3)
Feb 28	5	Multivariate	• Bailey, chapter 5 • BdM&F 9-10	Short Paper 1
Mar 7	6	Dummy Variables	• Bailey, chapter 6 (stop at interaction terms) • Saunders article	Problem Set 3 (from Ch 5)
Mar 14	7	Interaction Terms	• Last part of Bailey, Chapter 6 • Braumoeller article • Brambor et al article	Short paper 2
Mar 21	8	Midterm	Midterm prep	Nothing
Mar 28	9	SPRING BREAK	SPRING BREAK	SPRING BREAK
Apr 4 ONLINE	10	Transforming variables	• Bailey, chapter 7	Problem Set 4 (on Ch 6) Presentation on interactions
Apr 11	11	Fixed effects	• Bailey, chapter 8	Problem Set 5 (on Ch 7)

Apr 18	12	Instrumental variables	• Bailey, chapter 9	Short Paper 3
Apr 25	13	Experiments	• Bailey, chapter 10 • BdM&F 11	Nothing
May 2	14	Logit	• Bailey, chapter 12 • Logit chapter from Pollock	Presentation on experiments
May 9	15	Final Exam	• Nothing	Nothing