POLS 7014: Intermediate Political Methodology
Spring 2026

Instructor

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Office Hours: Monday 2:00–3:30 PM
and by appointment

Class Schedule

Thursday 2:55–5:35 PM
Candler Hall 214

Introduction

This course is the third course in the graduate methods sequence. POLS 7012 is a pre-requisite for this course. This course will focus on a particular statistical model used throughout the social sciences — the linear regression model. We will learn how to estimate the linear regression model and perform inference with it. We will learn how to identify and resolve potential problems common when estimating linear regression models. Finally, we will learn about a few models that extend beyond the standard linear regression model.

In addition to these statistical issues, we will also discuss how the results of regression analysis should be presented. We will practice both writing about regression analysis and presenting the results of regression analysis via tables and graphs.

Requirements and Evaluation

The main requirements of the course are to attend class, keep up with the readings, turn the homework assignments in on time, and ask lots of questions. We will attempt to cover a great deal of technical materials during the semester and will go as quickly or as slowly as is necessary to adequately cover the material.

Evaluation for the course will be based on homework assignments, a mid-term exam and a final exam. There will be between 8 and 10 homework assignments due during the semester. The assignments will be a combination of analytical problems, computer-generated graphs, and written essays and research notes. I encourage students to work together on assignments, but students must write up the assignments on their own. Late assignments will not be accepted unless prior arrangements have been made. Homework assignments will count for 40% of the final grade. Assignments and materials needed to complete them can be found on the course's eLC page.

The mid-term exam will count for 25% of the final grade. The final exam will count for the remaining 35% of the final grade. If you think you may miss an exam I need to know immediately.

Readings and Software

Required Texts

There are two required texts for this course. The first is a very good applied regression textbook and will be used extensively throughout the course:

> Fox, John. 2016. *Applied Regression Analysis and Generalized Linear Models, 3rd edition.* Thousand Oaks, CA: Sage Publications. (ISBN 978-1-4522-0566-3).

The second is a companion book to the main textbook that focuses on using R to perform statistical analysis:

> Fox, John and Sanford Weisberg. 2019. *An R Companion to Applied Regression, 3rd edition.* Thousand Oaks, CA: Sage Publications. (ISBN 978-1-5443-3647-3).

Supplemental Texts

There are a number of additional books that you may find useful throughout the class. The first is the undergrad text that I have used to teach undergraduate stats courses in the past. It does a good covers many of the methods used in political science research. It is a nice reference to have on the shelf.

> Agresti, Alan, and Barbara Finlay. *Statistical Methods for the Social Sciences*, any edition. Upper Saddle River, NJ: Prentice Hall.

Some of my colleagues love this book and use it in their undergraduate statistics courses. It is more advanced than Agestri and Finlay and uses R throughout the text.

> Imai, Kosuke. 2017. *Quantitative Social Science: An Introduction.* Princeton, NJ: Princeton University Press.

There are many alternative statistics textbooks which you may want to make use of during the semester. If you are struggling to learn a concept in one textbook, reading about the same concept in a different textbook may quickly clear things up. Here is one that I find to be useful. There are many other books out there and I would be happy to recommend more supplemental texts, if you are interested.

> Kennedy, Peter. *A Guide to Econometrics.*

Software
Becoming comfortable with statistical software is an important part of this course. I use R and will teach this course using R. While you are welcome to complete your homework assignments in any statistical package with which you are comfortable, I encourage you to use R in this course. R is a very good statistical software package that is available for free at www.r-project.org. The Fox R companion text we will be using for class is a great introduction to the software. Perhaps the more important reason for you to use R is that homework assignments for the course are likely to closely mirror the exercises and examples in Fox's R companion book.

Additional Readings
There are a few additional readings for the course. You will either receive a copy of these readings from me or a copy will be easily accessible on the internet.

Other Issues
(in no particular order)

1. **Syllabus Disclaimer**: The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

2. **Instructor Availability**: I am available to meet with students by appointment if anyone cannot attend my posted office hours. Please email me to schedule a meeting.

3. **Accessibility**: Students in need of accessibility resources of any kind are strongly encouraged to tell me at the beginning of the semester, so appropriate accommodations can be made. If you plan to request accommodations for this course, please register with Accessibility and Testing. They can be reached by visiting Clark Howell Hall, calling 706-542-8719 (voice) or by visiting their website.

4. **Classroom Behavior**: Students should behave professionally throughout the course. Disruptive behavior in discussion sections will not be tolerated. Laptops and other electronic may be used to take notes in class, but not in a way that is disruptive to other students.

   UGA is committed to creating a dynamic, diverse, and welcoming learning environment for all students and has a non-discrimination policy that reflects this philosophy. Our class will respect all students regardless of race, color, sex (including sexual harassment and pregnancy), sexual orientation, gender identity, ethnicity or national origin, religion, age, genetic information, disability, or veteran status.

5. **Cheating and Plagiarism**: UGA Student Honor Code: "I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others." A Culture of Honesty, the University's policy and procedures for handling cases of suspected dishonesty, can be found at Academic Honesty.

6. **FERPA Notice**: The Federal Family Educational Rights and Privacy Act (FERPA) grants students certain information privacy rights. More information can be found at the registrar's website.

7. **Well-being Resources**: UGA Well-being Resources promote student success by cultivating a culture that supports a more active, healthy, and engaged student community. Anyone needing assistance is encouraged to contact Student Care & Outreach (SCO) in the Division of Student Affairs at 706-542-8479 or visit sco.uga.edu. Student Care & Outreach helps students navigate difficult circumstances by connecting them with the most appropriate resources or services. They also administer the Embark@UGA program which supports students experiencing, or who have experienced, homelessness, foster care, or housing insecurity. UGA provides both clinical and non-clinical options to support student well-being and mental health, any time, any place. Whether on campus, or studying from home or abroad, UGA Well-being Resources are here to help.

    - Well-being Resources: well-being.uga.edu
    - Student Care and Outreach: sco.uga.edu
    - University Health Center: healthcenter.uga.edu
    - Counseling and Psychiatric Services: caps.uga.edu or CAPS 24/7 crisis support at 706-542-2273.
    - Health Promotion/ Fontaine Center: healthpromotion.uga.edu
    - Accessibility and Testing: accessibility.uga.edu

    Additional information, including free digital well-being resources, can be accessed through the UGA app or by visiting well-being.uga.edu.

8. **Artificial Intelligence-Based Software**: Students are allowed to use generative AI software for academic work, provided they document its use. This includes specifying the software used, the extent of its use, and how it contributed to the final product. AI-generated content must be cited appropriately, and students should include a brief reflection on how the AI tool helped them and what they learned from using it. The work must remain original, with AI not replacing critical thinking or personal effort. Instructors will evaluate both the content and the documentation of AI use, considering proper documentation in grading. Failure to document AI use may result in penalties, including reduced grades or academic disciplinary actions. Cases of suspected misuse will be reviewed by the academic integrity committee. (This paragraph was generated with the assistance of Copilot).

Course Topics

Introduction to Inference
Berry, Donald A. and LeeAnn Chastain. 2004. "Inferences about Testosterone Abuse among Athletes." *Chance* 17(2): 5-8.
Bailey, Michael. 2012. *Real Stats: Experiments, Data, Policy, Politics, and Law.* Chapter 2 and 3.

Inference and Significance Testing
Agresti and Finlay (1997) Chapters 4-6.

Examining Data/ R Refresher
Fox (2016) Chapters 2–3
Fox and Weisberg (2019) Chapters 1–3.3, 9
King, Gary. 1991. "On Political Methodology." Sections 1-3. *Political Analysis.* 2:1-30. (gking.harvard.edu/files/polmeth.pdf)
Healy, Kieran and James Moody. 2014. "Data Visualization in Sociology." *Annual Review of Sociology* 40:105-128.

Linear Regression
Fox (2016) Chapters 5.1, 6.1
Fox and Weisberg (2019) Chapters 4.1–4.2

Multiple Regression
Fox (2016) Chapters 5.2, 6.2–6.4
Fox and Weisberg (2019) Chapters 4.1.–4.9

Dummy-Variables
Fox (2016) Chapter 7

Introduction to Interactive Terms
Brambor, Thomas, William Roberts Clark, and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis.* 14:63–82.

Midterm Exam

Assumptions of OLS/Transformations
Fox (2016) Chapter 4
Fox and Weisberg (2019) Chapter 3.4

Linear Models in Matrix Form
Fox (2016) Chapter 9

Influential Data
Fox (2016) Chapter 11
Fox and Weisberg (2019) 8.1–8.3
Kahn, Joan R. and J. Richard Udry. 1986. "Marital Coital Frequency: Unnoticed Outliers and Unspecified Interactions Lead to Erroneous Conclusions." *American Sociological Review.* 51(5): 734-737.

Nonlinearity
Fox (2016) Chapter 12
Fox and Weisberg (2019) 8.4–8.6

Collinearity and Time Series
Fox (2016) Chapter 13 and 16
Fox and Weisberg (2019) 8.8–8.9

Logistic Regression
Fox (2016) Chapter 14
Fox and Weisberg (2019) 6.1–6.4

Catch Up and Review

Final Exam