

SYLLABUS

Course Time

Monday and Wednesday 1:00 - 2:15 pm: SPEA A203
Lab: Wednesday, 6:00 – 8:00 pm: SPEA A203

Instructor Information

Seth Freedman
SPEA 355
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Office Hours: Wednesdays, 2:30-4:00 or by appointment

Course Description

This is the second statistics course in the quantitative methods sequence required of all SPEA Ph.D. students. The course intends to provide relevant Statistics and Econometrics skills for your future research in various academic fields in SPEA. The contents of this course will be theoretical and practical, including hands on work using STATA.

Reading

Required books

Wooldridge, Jeffrey. *Econometric Analysis of Cross Section and Panel Data. Second Edition.* Cambridge, MA: MIT Press. (Feel free to purchase any edition of this book)

Angrist, Joshua, and Jorn-Steffen Pischke. 2009. *Mostly Harmless Econometrics.* Princeton, NJ: Princeton University Press.

Additional articles will be assigned throughout the semester

Recommended books

Wooldridge, Jeffrey. *Introductory Econometrics: Modern Approach.* Mason, OH: South-Western College Pub. (Feel free to purchase any edition of this book)

Cameron, A. Colin, and Pravin K. Trivedi. 2005. *Microeconometrics: Methods and Applications.* New York: Cambridge University Press.

Cameron, A. Colin, and Pravin K. Trivedi. 2010. *Microeconometrics Using Stata, Revised Edition.* College Park, Texas: STATA Press.

Course Requirements

Attendance:

Attendance is required.

Exams:

There will be a midterm and a final exam. The final exam will not be cumulative except to the extent that the material in the latter half of the course builds from the earlier material.

Weekly Assignments:

Problem sets will be assigned on Mondays and due on Fridays. These assignments will generally include a combination of two types of problems: data analysis problems that give you a chance to work with the course material in an applied setting using Stata, and conceptual problems that you will answer using some combination of mathematical analysis, social science theory, or reference to some underlying literature. There will be 15 assignments throughout the semester. Your lowest assignment score will be dropped.

Teaching Assistants

There are two Teaching Assistants: Ruth Winecoff and Felipe Lozano-Rojas

Lab Sessions

The course has weekly lab sessions, Wednesdays from 6:00-8:00pm. One of the TAs will facilitate each of the lab sessions.

You should think of the lab sessions as an integral part of the course. You should not skip them or think that they are optional. Lab work supports several of the course objectives. It gives you a structured opportunity to work with data and to implement the methods we discuss in class. They are group sessions and so they support discussions and conversations that are important for understanding the material and for learning how to participate in scholarly debates about statistics and econometrics.

Most of the lab sessions will focus on the assignment of the week. You'll be able to work through the material using the TA and your classmates as resources. The TAs will play a role in developing and implementing the weekly assignments. And they will grade the assignments. Sometimes, one of the TAs will provide a tutorial on a particular topic or method. For example, early in the semester, you'll get an introduction to Stata.

Grading Policy

Weekly Assignments	50%
Midterm Exam	25%
Final Exam	25%

Academic Misconduct and General Academic Policies

Cheating and plagiarism will not be tolerated. Definitions of various types of academic misconduct and University policies for dealing with violations are included in the Code of Student Rights, Responsibilities, and Conduct; see <http://www.indiana.edu/~code> for more information.

Course Schedule

Day	Date	Topic	Readings W = Wooldridge, Introductory Econometrics W* = Wooldridge, Econometric Analysis CT = Cameron & Trivedi, Microeconometrics MHE = Mostly Harmless Econometrics <i>Additional Readings (mostly papers) will be Announced Throughout Semester</i>
M	Jan 7	Review of Instrumental Variables	MHE 4, W* 5, CT 4.8-end of chapter 4
W	Jan 9	IV by Two Stage Least Squares	
M	Jan 14	Weak and Many Instruments, IV Hypothesis Testing	
W	Jan 16	Introduction to Panel Data	
M	Jan 21	<i>No Class, Martin Luther King Day</i>	
W	Jan 23	Fixed Effect Estimation	MHE 5.1, W* 10, CT 21
M	Jan 28	Fixed Effect Examples	
W	Jan 30	Two-Way Fixed Effects and Difference in Differences	MHE 5.2, W* 6.5, CT 22.6
M	Feb 4	TW FE, DID examples	
W	Feb 6	Event study estimation	
M	Feb 11	DDD, Measurement Error, Lagged Dependent Variables	MHE 5.3-5.4, CT 22.5
W	Feb 13	Dependent errors and clustering	MHE 8
M	Feb 18	Clustering applications and limitations	
W	Feb 20	Randomization inference	
M	Feb 25	Flex Time	
W	Feb 27	<i>Midterm Exam</i>	
M	Mar 4	Linear Probability Models	W 7.5, 8.5; Long Ch 3 (on Canvas)
W	Mar 6	Maximum Likelihood Estimation	W 746-747; W* 13.1-13.3 CT 5; Long 2.6 (on Canvas)
M	Mar 11	<i>Spring Break, No Class</i>	
W	Mar 13	<i>Spring Break, No Class</i>	
M	Mar 18	Logit and Probit	W 17.1; CT 14.1-14.4, 14.6; MHE 3.4.2

W	Mar 20	Marginal Effect, Odds Ratios, Predicted Probabilities	Long Ch 3 (on Canvas)
M	Mar 25	Model Selection and Fit, Interaction Terms	
W	Mar 27	Hypothesis testing	
M	Apr 1	Extension to Multinomial Outcomes	CT 15
W	Apr 3	Extension to Multinomial Outcomes	
M	Apr 8	Count Models	W 17.3; CT 20
W	Apr 10	Count Models	
M	Apr 15	Censored Outcomes	W 17.2, 17.4; CT 16.1-16.4
W	Apr 17	<i>No Class</i>	
M	Apr 22	Censored Outcomes/Nonlinear Panel Data Models	
W	Apr 24	Nonlinear Panel Data Models	W* 15.8, 16.2.4, 16.3.4, 18.7; CT 23
		FINAL EXAM, Friday, May 3, 10:15am – 2:15pm	