

SYLLABUS (Preliminary)

Course Time

Monday and Wednesday 1:00 - 2:15 pm: SPEA 270

Instructor Availability

Office: 331 SPEA Building

Office Hours: Monday and Wednesday, 2:15 pm to 3:45 pm at my office

Or by appointment

Email: hij@indiana.edu

Course Description

This is the first statistics course in the quantitative methods sequence required of all SPEA Ph.D. students. This 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. I plan to use STATA for the course. The pre-requisite for this course is the basic knowledge of statistics and probability theory. Master students need a permission from the instructor to take this course.

Reading

Required book for this class

Wooldridge, Jeffrey. 2008. *Introductory Econometrics: Modern Approach, 4th edition*. Mason, OH: South-Western College Pub.

Recommended book for this class

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

Wooldridge, Jeffrey. 2002. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.

Greene, William. 2007. *Econometric Analysis, 6th edition*. Upper Saddle River, New Jersey: Prentice Hall.

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

Davidson, Russel, and James G. MacKinnon. 2003. *Econometric Theory and Methods*. New York: Oxford University Press.

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

DeGroot, Morris H., and Mark J. Schervish. 2002. *Probability and Statistics, 3rd edition*. New York: Addison Wesley.

Dowling, Edward. 2000. *Schaum's Outline Introduction to Mathematical Economics, 3rd Edition*. McGraw-Hill

Freedman, David A. 2010. *Statistical Models and Causal Inference. A Dialogue with the Social Sciences*. New York: Cambridge University Press.

Course Requirements

Attendance:

Attendance is required.

Exams:

Monday quizzes cover the previous week classes. You are allowed to drop a lowest one. The final exam covers all materials of this course.

Group Homework:

Homework exercises will generally include a combination of two types of problems -- those that will need to be analyzed without computer assistance and those that will be addressed via use of STATA. You are required to work collaboratively with one or two other students in the class. A single set of answers for the assignment will be submitted by you and your group members collectively. However, all students should be able to successfully employ, on the exams and in class, the problem-solving approaches used on the homework assignments. Unless previously approved by the instructor, late homework assignments will be accepted with a 10 percent penalty per day late, up to three days.

Grading Policy

The following grading criteria will be used:

Weekly Quiz (Closed book and closed note)	35%
Final Exam (Closed book and one page note)	40%
Homework	20%
Class Discussion/Participation	5%

1st Week (Aug 25)

Mon	Basic Mathematical Tools Readings: Wooldridge (2008) Appendix A
Wed	Basic Mathematical Tools Readings: Wooldridge (2008) Appendix A

2nd Week (Sep 1)

Mon	Labor Day: No Class
Wed	Fundamentals of Probability Readings: Wooldridge (2008) Appendix B

3rd Week (Sep 8)

Mon	Fundamentals of Probability Readings: Wooldridge (2008) Appendix B
Wed	Fundamentals of Probability Readings: Wooldridge (2008) Appendix B

4th Week (Sep 15)

Mon	Fundamentals of Probability Readings: Wooldridge (2008) Appendix B
Wed	Fundamentals of Probability Readings: Wooldridge (2008) Appendix B

5th Week (Sep 22)

Mon	Fundamentals of Mathematical Statistics Readings: Wooldridge (2008) Appendix C Supplementary Readings: Wooldridge (2002) Chapter 3
Wed	Fundamentals of Mathematical Statistics Readings: Wooldridge (2008) Appendix C Supplementary Readings: Wooldridge (2002) Chapter 3

6th Week (Sep 29)

Mon	Fundamentals of Mathematical Statistics Readings: Wooldridge (2008) Appendix C Supplementary Readings: Wooldridge (2002) Chapter 3
Wed	Fundamentals of Mathematical Statistics Readings: Wooldridge (2008) Appendix C Supplementary Readings: Wooldridge (2002) Chapter 3

7th Week (Oct 6)

Mon	Fundamentals of Mathematical Statistics Readings: Wooldridge (2008) Appendix C Supplementary Readings: Wooldridge (2002) Chapter 3
Wed	Fundamentals of Mathematical Statistics Readings: Wooldridge (2008) Appendix C Supplementary Readings: Wooldridge (2002) Chapter 3

8th Week (Oct 13)

Mon	Introduction and Simple Regression Readings: Wooldridge (2008) Chapters 1 and 2
Wed	Introduction and Simple Regression Readings: Wooldridge (2008) Chapters 1 and 2

9th Week (Oct 20)

Mon	Introduction and Simple Regression Readings: Wooldridge (2008) Chapters 1 and 2
Wed	Introduction and Simple Regression Readings: Wooldridge (2008) Chapters 1 and 2

10th Week (Oct 27)

Mon	Multiple Regression Analysis: Estimation Readings: Wooldridge (2008) Chapter 3
Wed	Multiple Regression Analysis: Estimation Readings: Wooldridge (2008) Chapter 3

11th Week (Nov 3)

Mon	Multiple Regression Analysis: Estimation Readings: Wooldridge (2008) Chapter 3
Tue 5:30 to 6:45 pm	Make-up Class for Wed, Nov 5 th Multiple Regression Analysis: Estimation Readings: Wooldridge (2008) Chapter 3 Place: TBA
Wed	No Class (APPAM Conference)

12th Week (Nov 10)

Mon	Multiple Regression Analysis: Inference Readings: Wooldridge (2008) Chapter 4
Wed	Multiple Regression Analysis: Inference Readings: Wooldridge (2008) Chapter 4

13th Week (Nov 17)

Mon	Multiple Regression Analysis: OLS Asymptotics Readings: Wooldridge (2008) Chapter 5, Appendices D and E Supplementary Readings: Wooldridge (2002) Introduction, Chapters 4.1 – 4.2
Wed	Heteroskedasticity Readings: Wooldridge (2008) Chapter 8 Supplementary Readings: Wooldridge (2002) Chapter 4.2, Chapters 7.1 – 7.6

14th Week (Nov 24): **Thanksgiving Break**

Mon	No Class
Wed	No Class

15th Week (Dec 1)

Mon	Heteroskedasticity Readings: Wooldridge (2008) Chapter 8 Supplementary Readings: Wooldridge (2002) Chapter 4.2, Chapters 7.1 – 7.6
Wed	Heteroskedasticity Readings: Wooldridge (2008) Chapter 8 Supplementary Readings: Wooldridge (2002) Chapter 4.2, Chapters 7.1 – 7.6

16th Week (Dec 8)

Mon	OLS using Matrix Algebra (If time is allowed)
Wed	Final Exam Review Session

17th Week (Dec 15): Final Exam Week

Wed	Final Exam (Closed book and one page note, Bring your own calculator) 5:00-7:00 p.m., Wed, December 17
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