

Syllabus

Statistics for Econometrics
ECN 8070

Fall, 2011

(T/Th 2:00-3:15)

Sanford 204

Prof. Atkinson
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1. The Course:

This course is designed to provide the student with the statistical fundamentals of probability, estimation, and hypothesis testing that are necessary to understand the other Econometrics Courses and theory/field courses. The text that much of the lecture will be based on is Berry and Lindgren (BL). This is now out of print. You are free to xerox copies of mine or use any comparable book. Significant use will also be made of *Introduction to Statistics and Econometrics* by Amemiya (TA) and Rice (R), *Mathematical Statistics and Data Analysis*, 3rd edition, 2007, Duxbury Press. The Hogg and Tannis (HT) book is excellent at a more basic level. This text is optional. BL will form the outline for the course. Fundamentals will be solidified with problem sets and their applied value stressed with empirical applications. We will emphasize application of theory to the linear model using a number of simulation projects. The use of TSP 5.0 (with XP) or 5.1 (with 7) is required for all simulation projects. You can obtain an account on the Terry computer from the help desk if you wish to use it for running TSP. Alternatively, you can purchase a student version of TSP for use on your PC. Everyone must have a UGA email account. Also, all project sets, previous exams, this course syllabus, and other relevant material are on the web page for this course by going to Terry College, Economics, Atkinson (and at the bottom), 8070.

2. Grading:

There will be one hour exam (40% of grade), 3 problem sets/computer exercises (10% of grade), a paper (10% of grade) and a final exam (40% of grade). The exercises are essential to understanding the material. The payoff will be in the exams. All problems sets due before the hour exam must be worked at 80 % accuracy or else the hour exam cannot be taken. For each day late or fraction thereof that homework is turned in late, 15 points will be deducted. All problems sets due after the hour exam must be worked at 80 % accuracy or else the final exam cannot be taken. See the web site for details on the paper. Positive participation in class is important and can result in up to a 3 point increase in your final average.

3. Attendance: Do not come late to class. More that two or three minutes after class starts counts as an absence. You have 2 free absences from class. For each additional absence without a doctor's excuse, I will deduct one-half of a letter grade from your final grade. If I deem that your absences are cronic, I will drop you from the class without warning; this could occur at any time during the semester.

4. Texts – Required Materials:

- a. Berry and Lindgren *Statistics: Theory and Methods*, Duxbury, Second Ed. (BL) plus accompanying student Study Guide or
- b. Rice (R), *Mathatical Statistics and Data Analysis*, Duxbury Press, 3rd edition, 2007.
- c. *Reference Guide and User’s Guide for TSP 5.0 or 5.1 plus software.*

5. Useful statistics and econometrics texts:

Amemiya, Takeshi, *Introduction to Statistics and Econometrics*, Harvard U. Press, 1994. (TA)

Hogg and Tanis, *Probability and Statistical Inference*, MacMillan, 1988. (HT)

Gallant, Ronald, *An Introduction to Econometric Theory*, Princeton U. Press, 1997.

Goldberger, A. A., *Econometrics*, 2nd edition, MacMillan, 1986.

Green, *Econometric Analysis*, MacMillan, 1989.

Judge, et al. *Introduction to the Theory and Practice of Econometrics*, New York: Wiley 1987, 2nd edition.

Wonnacott and Wonnacott, *Introductory Statistics*, New York: Wiley.

Wooldridge, J. M., *Econometric Analysis of Cross Section and Panel Data*, MIT Press, 2002. (JW2002)

Wooldridge, J. M., *Introductory Econometrics*, South-Western, 1999.

6. Prerequisites – Two semesters of Calculus or the equivalent plus introductory statistics

7. My office is 503 Brooks Hall and office hours are 12:30–1:45 and 3:30-4:30 on T/Th and by appointment. Please make appointments in class or by email.

8. All homework is due by 4:30 Thursday of the week it is scheduled as due.

9. Cheating on exams constitutes a grade of F. As a UGA student, you have agreed to abide by the University’s academic honesty policy, “A Culture of Honesty,” and the Student Honor Code. All academic work must meet the standards described in “A Culture of Honesty” found at www.uga.edu/honesty. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

10. All exams are mandatory. The only valid excuses for a makeup are illness and death in the family or other equally serious family matters. You must notify me *before* the exam in the case of a serious family or personal matter. In the case of illness you must call me

directly before the exam or leave a phone message in my office. Exams are to be made up the day of the next class meeting.

11. General Description of Course - We will cover most of the first 9 chapters in BL, conditional expectations from JW2002, and briefly an introduction to the bivariate regression model, ch. 10 in TA. A standard stat class would not attempt to get into hypothesis testing at all in one semester. Therefore, our treatment of hypothesis testing in Ch. 10 of BL will be cursory. The first 9 chapters of BL will serve as the basic outline for the course. These correspond to parts of the first six chapters of TA plus parts of nine. So you will have to hunt sometimes for the corresponding treatment in the TA book. Be sure to come to every class to find out what is covered and what is not. You are responsible only for the former, not the latter. Read along in an easier text such as HT. It covers topics much in the same order as BL. Try to work the problems in TA—they are very good—and as many as necessary in BL. The general order and timing of topics is as follows. The dates for exams and due dates for homework exercises are tentative. All projects must be done using TSP for software, without exception, so that I can adequately describe the process and help you with problems.

COURSE OUTLINE

All dates for exams and homeworks are tentative except for final.
 The course syllabus is a general plan for the course;
 deviations announced to the class by the instructor will be necessary.

Week	Starts	Topic
1		Probability – ch. 2 TA and ch. 1 BL or R Bivariate Regression Model, pgs. 229-234 TA Basics of TSP
2		Discrete R. V.'s – ch. 3 TA and ch. 2 BL or R Basics of TSP
3		Averages – ch. 3 BL or ch. 4 R, ch. 4 TA, and ch. 2 JW2002
4		Same topic
5		Bernoulli and Related Vars.– ch. 5 TA; ch. 4 in BL
**	1ST PROBLEM SET DUE	
6		Continuous RVs – ch. 3 R or ch. 5 BL – ch. 3 BL and ch. 5 TA
7		Bootstrap and Monte Carlo
**	HOUR EXAM	
8		Families of Continuous Distributions – ch. 5 TA and ch. 6 BL
9		Maximum Likelihood
10		Organizing and Describing Data– ch. 7 BL
**	2ND PROBLEM SET DUE	
11		Samples, Statistics, and Sampling Distributions – ch. 8 BL or ch. 6 R
**	FALL BREAK – F 10/28—NO CLASS ANYWAY	
12		Same Topic
13		Estimation – ch. 9 BL or ch. 8 R and ch. 7 TA
14		Same Topic
15		Significance Testing– ch. 10, 12.7 BL or ch. 9 R and ch. 9 TA
**	THANKSGIVING BREAK — vacation 11/21-25 M-F	
16		Same topic
**	3RD PROBLEM SET DUE	
17		Intro to MCMC– ch. 11 BL
**	PAPER DUE AND PRESENTATIONS IN CLASS	
**	LAST DAY OF THIS CLASS 12/1 (Th)	
**	NO CLASS 12/6 (Tu)—FRIDAY CLASS SCHEDULE	
**	12/8 (Thurs.)– FINAL EXAM 3:30-6:30 p.m.	