Economics 7810/8810: Econometrics I  
Spring 2010

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2:40-4:05pm TR  
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Office hours:  TR 1:30-2:30pm and by appointment

Prerequisites: Economics 7125/8125 or permission of instructor.

Course structure: This course provides an overview of elementary econometric theory and methods with applications. An understanding of the basic concepts of statistical inference and linear algebra is assumed.

Text and Readings: Three textbooks are recommended depending on your background and preparation: 1) Johnston, Jack and John Di Nardo, Econometric Methods, 4th Ed. (New York: McGraw Hill, 1997 hereinafter J & D, 2) Greene, William H., Econometric Analysis, 6th Ed. (Upper Saddle River, NJ: Pearson/Prentice Hall, 2008), hereinafter G, and 3) Brooks, Chris Introductory Econometrics for Finance, 2nd Ed. (Cambridge: Cambridge University Press), hereinafter B. Most lecture topics follow Johnston and DiNardo, while Greene may serve as an alternative explanation for some difficult topics and as an excellent reference. Brooks is the most elementary of the three and focuses on finance topics. There are many interesting applications and all of the estimation is done using EViews, which we will use in this class. Also Hayashi, Fumio, Econometrics (Princeton: Princeton University Press, 2000) is an excellent, more theoretical, book that you may wish to follow throughout the course as well. Less theoretical, more applied texts primarily for undergraduate courses are Gujarati, Damodar, Basic Econometrics 4th Ed. (New York: McGraw Hill, 2003), Wooldridge, Jeffrey M., Introductory Econometrics, 4th Ed. (Mason, OH: South-Western Publishing) and Stock, James and Mark Watson, Introduction to Econometrics, 2nd Ed. (New York: Pearson-Addison Wesley, 2007). There are numerous other text books and reference books that may also be of interest.

We will use EViews for all exercises and applications. EViews 6 is now available on TigerLan. EViews 7 was just released and will be installed on TigerLan within a month or so. The student edition may be purchased directly from Quantitative Micro Software. This is recommended.

Examinations and Grading: There will be a midterm, a final exam, a research paper and two graded homework sets. Each component is of equal weight (25%). There are no make ups of missed exams. No late assignments will be accepted. The homework problems assigned below are to gain a better understanding of the material presented and will not be collected or graded. Guidelines for the research paper will be provided in class. See also Chapter 13 of Brooks to start with. The plus and minus grading system will be used.

Academic Misconduct: Academic dishonesty of any sort will not be tolerated. The minimum punishment for academic dishonesty will be an F in the course. Further action may be taken. Refer to the University of Memphis Code of Student Conduct on the University web site.
Course Outline:

I. Review of Matrix Algebra and Statistical Inference  
   J & D: Appendices A and B  
   G: Appendices A-D  
   B: Appendix 1

II. Classical Linear Regression: two variable case  
   J & D: Chapter 1 and 2  
   B: Chapter 1 and 2.  
   Homework problems: J&D: 1.3, 1.6, 1.9, 1.14, 1.15, 2.2, 2.4, 2.9

III. Multiple Regression and Hypothesis Testing  
   J & D: Chapter 3  
   G: Chapters 2-5  
   G: Chapter 3  
   Homework problems: J&D: 3.7, 3.8, 3.11, 3.20;  
   G: Chpt 3.: 1, 3, 7, 10, 14; Chpt. 4: 1, 5, 7, Ap. 1; Chpt. 5: 1, 5;

** Midterm Exam Thursday March 5, tentative **

IV. Functional Form, Structural Change and Specification Error  
   J&D: Chapter 4  
   G: Chapters 6, 7  
   B: Chapter 4  
   Homework problems: J & D: 4.2, 4.3, 4.8;  
   G: Chpt. 6: ap. 3, 4; Chpt. 7: 1, 3

V. Maximum Likelihood, Generalized Least Squares and Instrumental Variables  
   J&D: Chapter 5  
   G: Chapter 8,12  
   Homework problems: J & D: 5.2, 5.5 ;  
   G: Chpt. 8: 1, 6

VI. Heteroscedasticity and Auto/Serial Correlation  
   J&D: Chapter 6  
   G: Chapters 8 and 19  
   B: Chapter 4  
   Homework problems: D&J: 6.1, 6.3;  
   G: Chpt. 8: Apl. 1; Chpt. 19: 1, 3, 4

VII. Other Topics, if time allows

*** Project due date Tuesday April 27 ***
*** Final Exam 1:00 – 3:00pm Tuesday May 4. ***