The purpose of this course is to teach graduate level students to think rigorously and clearly about econometric theory and its application. This course introduces classical development of econometric technique as well as relevant statistical theory.

Undergraduate level calculus and statistics.

3. ET (Econometrics Tool Kit) Computer Software Manual

Among these textbooks, Gujarati's book is the main one which we will follow closely. All chapters listed in the course schedule refer to Gujarati's book. Johnston's book has a similar context as Gujarati's, but presents materials using a matrix notation. Those who understand matrix algebra can use this book as a reference for more advanced topics. ET is a computer software we will use for computer assignments. ET is a stripped-down version of LIMDEP. Those students who know LIMDEP can use LIMDEP instead of ET.

Two lectures per week. Two midterms and one final exam will be given. The first midterm will be given after section 4 of the course outline and the second midterm after section 7. Several problem sets and computer assignments will be given throughout the semester.

Each exam will be counted equally.
TENTATIVE COURSE SCHEDULE

1. Introduction and Review of Statistics
   Chapter 1 and Appendix A.1 to A.5

2. Basic Regression Model
   Chapter 2

3. Estimation of the Basic Regression Model
   Chapters 3, 4

4. Statistical Inference and Hypothesis Testing
   Appendix A.6 and Chapter 5

5. Multiple Regression Model - Estimation and Inference
   Chapters 7, 8

6. Extension of the Linear Regression Model
   Chapter 6

7. Problems and Violations of the Classical Regression Model Assumptions
   A) Multicollinearity
      Chapter 10
   B) Heteroskedasticity
      Chapter 11
   C) Autocorrelation
      Chapter 12
   D) Model Specification
      Chapter 13

8. Dummy Variables - Estimation and Hypothesis Testing
   Chapter 14

9. Simultaneous Equations Models
   A) Endogenous Regressors
      Chapter 17
   B) Identification Problem
      Chapter 18
   C) Estimation - ILS and 2SLS
      Chapter 19
Course Information

Introduction: Economics 6818 is a one-semester course in econometric theory and methods. It is presumed that you have taken Economics 481, or the equivalent. The course is designed both to provide a basis for the continuing study of econometrics, and to enable the student to use and learn some additional econometric tools. Course material will include matrix algebra, statistical inference, the multiple linear regression model, and some topics in econometrics.

Exams: There will be three or four hourly examinations, approximately spaced throughout the course.

Problem sets: there will be periodic problem sets throughout the semester. Some will require use of a computer, either the mainframe or a microcomputer. Empirical problem sets will be designed for the use of the software ET (Econometric Tools), supported in the microcomputer lab. I strongly suggest that you become familiar with the microcomputer lab and software in the basement of the Economics building.

Text: We will use a manuscript in preparation, by William Greene (also the author of ET). I will make available the relevant chapters at Kinko’s.

Tentative course outline:

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