Fall 1999 Eco 663 Econometrics

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Office Hours: Monday and Tuesday: 3:30 - 5:00, Thursday: 3:00 – 5:00, and by appointment

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Texts:

Required: William H. Greene, Econometric Analysis, 3rd Edition

Helpful: Damodar Gujarati, Basic Econometrics, 2nd Edition
Jan Kmenta, Elements of Econometrics, 2nd Edition
G. S. Maddala, Introduction to Econometrics, 2nd Edition
(Gujarati and Kmenta books are on reserve at King Library).

Course Description and Objectives:

Econometrics is the application of mathematics and statistics to data in order to examine the relationship between economic variables (such as Gross Domestic Product (GDP), interest rates, and rates of inflation), and provide empirical tests of economic theory that describes the relationships between the variables. Econometrics involves the estimation and testing of models not only to test economic theory, but also to make predictions based on the theory. Examples of questions that Econometrics (through models) tries to answer are

a) What impact will a change in the Money Supply have on GDP, interest rates, and rates of inflation?

b) How will the recent tax cut proposals being discussed affect the U.S. economy?

c) Does competition, the firm ownership structure (for-profit, non-profit, or government ownership) and other factors impact how efficient firms produce their goods and services?

d) What impact does the minimum wage and changes in the wage have on unemployment (level and rates) in the U.S.? Are different groups affected in different ways by the minimum wage?

One objective of the course is to understand basic methods that are used to estimate the models used to examine economic theory. Another course objective is to be able to interpret the model results and perform various hypothesis tests in order to test economic theory. A third course objective will be to recognize the types of problems that can occur in estimating models, and the types of procedures that can be used to solve the problems. Topics to be covered in the course

include least squares regression analysis, hypothesis testing, omitted variables, and multicollinearity.

Homework Assignments:

There will be several homework assignments given throughout the course. There will be at least one homework assignment before each exam. Homework assignments could ask you to solve problems, estimate models and interpret the results, and other possible items. I will announce ahead of time when the assignments are due.

Exams:

There will be two midterms and a final exam. Midterms shall be given at night, and are tentatively scheduled for the following dates:

First Midterm:	Wednesday October 6
Second Midterm:	Wednesday November 17
Final Exam:	Tuesday December 14 at 7:30 a.m.

The final exam is cumulative. I will let you know in advance what material is relevant for each midterm, and what material covered by the midterms are relevant for the final exam. If an absence for an exam cannot be avoided, please notify me before the exam (preferably a week before) so that a make up can be arranged. I will give a make up exam for an excused absence, but will not give a make up for an unexcused absence. An unexcused absence from an exam will result in a score of zero for the exam. The format of make up exams are at the instructor's discretion.

Computing

Given the objectives of the course, you will have to become familiar with at least one statistical package. Data shall be provided as well as basic information necessary to get started. However, I expect you to be willing to search through the necessary computer manuals to figure out the necessary details.

Grading:

Your final course grade is based on your performance on the homework assignments, midterms, and the final exam. Weights of the assignments and exams in your final grade are:

Homework:	20%
Each Midterm:	28%
Final Exam:	24%.

I will use the plus/minus grading system. The tentative grading scale for the class, in percentage of total points, is as follows:

A- to A:	89 - 100

B- to B+:	78 - 88
C- to C+:	66 - 77
D- to D+:	55 - 65
F:	54 and below

Typically, the plus grade lies in the upper three points of each interval, while the minus grade lies in the lower three points of each interval. The grading scale is to indicate the minimum grade that you are receiving.

Topics to be covered:

Listed below are the topics to be covered and the corresponding chapters in the text:

	Topics	Chapter
I)	Introduction to Econometrics	
	Introduction	Ch. 1
	Probability Distribution	Ch. 3
	Statistics	Ch. 4
II)	Classical Linear Regression Model	
	Ordinary Least Squares	Ch. 6
	Properties of Estimators	Ch. 4, Ch. 6
	Hypothesis Testing	Ch. 4, Ch. 7
	Matrix Algebra	Ch. 2
	Maximum Likelihood	Ch. 2, Ch. 6
III)	Specification and Functional Form	
	Dummy Variables	Ch. 8
	Omitted and Irrelevant Variables	Ch. 8
	Measurement Error	Ch. 9
IV)	Problems in Regression Analysis	
	Multicollinearity	Ch. 9
	Heteroscedasticity	Ch. 12
	Autocorrelation	Ch. 13
	Generalized Least Squares	Ch. 11
V)	Multiple Equation Models *	
	Seemingly Unrelated Regressions	Ch. 15
	Simultaneous Equations	Ch. 16

* Time permitting