ECONOMICS 162: Introduction to Econometrics

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Brown University
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Course Website: available at mycourses.brown.edu

Course Description:

The term *econometrics* means economic measurement. Econometrics is a body of statistical methods developed for the analysis of economic data. Economists use econometrics to measure economic phenomena, estimate economic relationships, test the validity of competing economic theories, forecast economic variables, and evaluate government and business policies.

Economics 162 is the basic introductory course in econometrics in the Economics Department at Brown. The course covers topics in probability theory, statistics, and econometrics, including simple and multiple regression analysis, and inference and hypothesis testing. Time permitting, we will also cover problems in estimation. The goal of the course is to provide students with the theoretical background and practical skills needed for interpreting and carrying out empirical work in economics.

Requirements:

Economics 162 is a requirement for students concentrating in Economics or the Business Economics track of COE. The prerequisites are Economics 11 and Mathematics 6, 7 or 9. There is no statistics prerequisite. Students are encouraged to take this course as early as possible, as it is a prerequisite for some electives in the Economics Department.

Economics 162 is to be distinguished from Economics 163, the other introductory econometrics course, which requires a background in both statistics and matrix algebra, and which is taught at a more advanced level. If you are a Mathematical Economics, Computer Science – Economics, or Applied Math - Economics concentrator, you must take Economics 163, rather than this course.

Course Structure:

The course has two lecture components: chalkboard lectures and computer lectures. The chalkboard lectures will be taught by Professor Friedberg on Mondays and Wednesdays 11:00-11:50 in Hunter Lab Auditorium. These lectures will cover the theoretical material that forms the basis of the course. The computer lectures will be taught by Mr. Levkov and Mr. Puskin in Watson CIT Building room 265 at the time assigned to you as your conference section by the registrar. These lectures will cover the application of econometrics to real-life data sets and problems. The computer lectures will also cover some of the topics that are better illustrated with the help of a computer. Material covered exclusively in the computer lectures will appear on the exams, so be aware that these are not just optional "sections." The times of the computer lectures are as follows:

C01	Tuesday	12:00-12:50 p.m.	Puskin
C02	Tuesday	7:00- 7:50 p.m.	Puskin
C03	Thursday	12:00-12:50 p.m.	Levkov
C04	Thursday	7:00- 7:50 p.m.	Levkov

Students who did not receive a section assignment from the registrar should attend the following computer lectures according to the last digit of their student identification number:

C01	SISD number ending in 0-1
C02	SISD number ending in 2-4
C03	SISD number ending in 5-6
C04	SISD number ending in 7-9

Computer lecture scheduling problems should be brought to the attention of Mr. Levkov or Mr. Puskin. Fridays 11:00-11:50 in Hunter Lab Auditorium will be reserved for going over answers to homeworks and the exam and for review sessions.

Grading:

Grading will be based upon one midterm exam (30%), a cumulative final exam (45%), and a set of weekly homework assignments, usually on the computer (25%).

Homeworks will be due at the start of the chalkboard lecture on the day they are due (usually on a Wednesday). Answers to the homework will be posted on the web immediately. Therefore no late homeworks will be accepted. Student cooperation and discussion of the material is encouraged. However, homework assignments must be the work of only the student whose name appears on them. Any evidence suggesting the contrary will be considered to be a violation of the Academic Code.

The midterm will be held on Wednesday, March 7th in class. The final will be on Monday, May 14th at 9:00 a.m. No makeup or early exams will be given, except in the case of a family emergency or medical absence confirmed by a dean. Any other exam scheduling problems should be brought to Professor Friedberg's attention in the first two weeks of class.

Reading:

The textbook for the course is *Essentials of Econometrics*, 3rd edition, by Damodar Gujarati, published by McGraw-Hill Irwin, 2006. The text is available at the Brown bookstore.

Outline of Topics:

1. Introduction (Ch. 1)

2. Statistics and Probability (Ch. 2-4)

3. Inference: Estimation and Hypothesis Testing (Ch. 5)

4. Simple Regression: Basics (Ch. 6)

5. Simple Regression: Hypothesis Testing (Ch. 7)

6. Functional Form (Ch. 9-10)

7. Multiple Regression (Ch. 8)

8. Specification Errors (Ch. 11 and 15)