

Economics 184b: Econometrics Spring 2010

Professor Brainerd
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Office hours: TBA
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Course description: This course provides an introduction to the methods and statistical techniques used to test economic theory and analyze economic data. The importance of econometrics is not limited to economics; the tools you will learn are also widely used outside of economics, in fields ranging from public policy, public health, sociology and psychology to marketing and finance.

The main tool of econometrics is regression analysis, which is concerned with uncovering and estimating relationships between different variables. In this course we will learn about regression analysis, emphasizing the intuition behind the procedures and how to apply them to real-world data. You will gain hands-on experience analyzing data and interpreting the results through a series of exercises in which you use econometric software to analyze data sets.

Upon successful completion of the course you will:

- Understand the basic statistical assumptions underlying regression analysis and the situations in which these assumptions are appropriate
- Be able to identify when the basic regression assumptions may be violated and to correct for these violations using appropriate techniques
- Have proficiency using Stata (a widely-used statistical software package), and
- Be able to implement original research using the empirical techniques you have learned.

Prerequisites: Econ 80a, Econ 82b, and Econ 83a

Course materials: The required textbook for the course is James H. Stock and Mark W. Watson, *Introduction to Econometrics* (2nd edition), Pearson/Addison Wesley, 2007. Additional supplemental readings for the course will be posted on LATTE.

Course requirements: Students will be evaluated on the basis of problem sets, two midterm exams, and a final exam:

Problem sets	15%
Midterm 1 (Friday, Feb. 26)	25%
Midterm 2 (Friday, March 26)	25%
Final exam (cumulative)	35%

Problem sets and exams: Seven problem sets will be due during the semester, on the dates listed below. Complete problem sets must be turned in at the beginning of class on the due date. *Late problem sets will not be accepted under any circumstances.* To accommodate illness and

unforeseen conflicts, I will drop the lowest score among your problem sets in the grade calculation. In other words, you must turn in six of the seven problem sets; alternatively you can turn in all seven problem sets and I will take the top six grades in calculating your problem set grade.

No make-up exams will be given in this course. Please note that absence from an exam will be excused ONLY for a serious illness or family emergency that is appropriately documented; otherwise a grade of zero will be assigned. There are NO EXCEPTIONS to this rule.

Special accommodations: If you are a student with a documented disability on record at Brandeis University and wish to have a reasonable accommodation made for you in this class, please see me immediately. Please keep in mind that reasonable accommodations are not provided retroactively.

Academic honesty: You are expected to be familiar with and to follow the University's policies on academic integrity (see <http://www.brandeis.edu/studentlife/sdje/ai/>). Instances of alleged dishonesty will be forwarded to the Office of Campus Life for possible referral to the Student Judicial System. Potential sanctions include failure in the course and suspension from the University. If you have any questions about my expectations, please ask. Academic dishonesty will not be tolerated.

KEY DATES FOR THE CLASS:

Most Fridays: Problem set due in class.

Midterm 1: Friday, February 26

Midterm 2: Friday, March 26

Final exam: Scheduled during exam period

No class: Friday, April 23

CLASS SCHEDULE

Class #	Date	Topic	Reading	PS due (tentative)
1	Tuesday Jan. 19	Introduction to the course	Ch. 1	
2	Friday Jan. 22	Review of probability	Ch. 2	
3	Tuesday Jan. 26	Review of statistics	Ch. 3	
4	Friday Jan. 29	Introduction to Stata		
5	Tuesday Feb. 2	Bivariate regression	Ch. 4	
6	Friday Feb. 5	Bivariate regression	Ch. 4 and 5	1
7	Tuesday Feb. 9	Bivariate regression	Ch. 5	
8	Friday Feb. 12	Multiple regression	Ch. 6	2
9	Tuesday Feb. 23	Catch-up and review		
10	Friday Feb. 26	Midterm 1		
11	Tuesday March 2	Hypothesis testing	Ch. 7	
12	Friday March 5	Nonlinear regressions	Ch. 8	3
13	Tuesday March 9	Internal and external validity	Ch. 9	
14	Friday March 12	Panel data	Ch. 10	4
15	Tuesday March 16	Panel data	Ch. 10	
16	Friday March 19	Binary dependent variable	Ch. 11	
17	Tuesday March 23	Catch-up and review		
18	Friday March 26	Midterm 2		
19	Friday April 9	Binary dependent variable	Ch. 11	5
20	Tuesday April 13	Instrumental variables	Ch. 12	
21	Friday April 16	Instrumental variables	Ch. 12	6
22	Tuesday April 20	Experiments and quasi-experiments	Ch. 13	
23	Friday April 23	No class		
24	Tuesday April 27	Experiments and quasi-experiments	Ch. 13	

25	Friday April 30	Introduction to time series analysis	Ch. 14	7
26	Tuesday May 4	Review		