



## **ECON 211f(1): Introduction to Econometrics Spring 2009**

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**Office: PhD Room, Sachar**

**Office hours: Mon and Wed 9:30 – 12:30am or by appointment (e-mail)**

**Course information: International Hall, Mon and Wed 8:00 - 9:30am**

**Teaching Assistant: Carlos Yopez, [cyepez@brandeis.edu](mailto:cyepez@brandeis.edu)**

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### **Course Description and Objectives:**

The objective of this half-semester course is to teach you how to use econometric methods to quantify economic relations. The major learning outcome is discovering how to conduct – and how to critique – empirical studies in economics, business and finance. The emphasis will be on applications rather than econometric theory.

The course starts with a brief revision of important probability concepts like random variables and probability distributions. Then we will cover estimation, hypothesis testing and confidence intervals in the simplest regression model with only one explanatory variable. Once you have gained a solid understanding of these econometric concepts, we will apply them to multivariate regressions. To make our models more versatile, we will introduce nonlinear functions, dummy variables and interaction terms. At the end of the module, you will gain knowledge of how to assess empirical studies and how to conduct an empirical project.

### **Prerequisites:**

Statistics or ECON 210(f). In addition, I expect you to have taken some economics courses beyond the introductory level. Linear algebra is not required. This class is fairly computational and computer-software intensive. If in doubt about taking the class, please see me.

### **Required Textbook and Software:**

Stock and Watson, Introduction to Econometrics, 2<sup>nd</sup> ed. Publisher: Addison-Wesley

Baum, An Introduction to Modern Econometrics Using Stata. Publisher: Stata Press (recommended)

STATA (available on the school network). The teaching assistant will hold Stata tutorials at the beginning of the semester outside of regular class time to help you with learning Stata. I will also post several Stata tutorials on the course website.

**Evaluation:** your grade will be determined on the basis of your performance on:

- Weekly problem sets (20%)
- Attendance and participation (25%)
- Exam (35%)
- Group project: write-up and presentation (20%)



### **Problem sets**

Generally problem sets will be assigned each week and are due at the beginning of class one week later. The assignments will be a mixture of computational questions and empirical applications using STATA. Late solutions will not be accepted, because the answers will be posted on the course website immediately after class. I will drop the lowest score on the problem sets when calculating your final grade. You are encouraged to work in small groups on the assignments, but you need to write your answers independently.

### **Attendance and participation**

Attendance will be recorded each class. I treasure your ideas and feedback; this is why I put a heavy weight on class participation. The importance of being able to communicate your ideas and to participate effectively in discussions can not be over-emphasized, especially for business school students.

### **Exam**

If you miss the exam without an acceptable legal document/reason, no make-up exam will be given. I will post old exams two weeks before the exam date to give you a sense of what you can expect.

### **Group Project**

You will work in small groups of 3-5 students to conduct an empirical study. Your goal is to answer a business, economic or financial question of interest to your group through data analysis. A detailed description of the project components will be distributed and discussed in class at the beginning of the semester. The project deliverables include a report (maximum 10 pages of typed text, not including graphs and tables) and an in-class presentation.

### **Disabilities and Academic Integrity**

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. You are expected to be familiar with and to follow the University's policies on academic integrity (see [http://www.brandeis.edu/global/current\\_academic\\_integrity.php](http://www.brandeis.edu/global/current_academic_integrity.php) ). 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.



**Course Plan for ECON 211 Introduction to Econometrics**

Lecture	Date	Topic	Readings	Problem Sets	
				Posted	Due
1	16-Jan	Introduction and Project description	Handout		
2	23-Jan	Review of probability and statistics I	Ch. 2 & 3	PS1	
3	28-Jan	Review of probability and statistics II	Ch. 2 & 3		
4	30-Jan	Bivariate regression I	Ch. 4	PS2	PS1
5	4-Feb	Bivariate regression II	Ch. 5		
6	6-Feb	Multivariate regression I	Ch.6	PS3	PS2
7	11-Feb	Multivariate regression II	Ch. 7		
8	13-Feb	Nonlinear regression I	Ch.8	PS4	PS3
9	25-Feb	Nonlinear regression II	Ch.8		
10	27-Feb	Assessing empirical studies	Ch. 9		PS4
11	3-Mar	Assessing empirical studies	Ch. 9		
12	5-Mar	Review			
13	10-Mar	<b>Exam</b>			
14	12-Mar	<b>Project Presentations</b>			

Readings are from Stock and Watson, Introduction to Econometrics, 2<sup>nd</sup> edition.

Problem sets, along with the corresponding Stata data files and codebooks/data descriptions will be posted on the course website.