

### **EC414: Introduction to Econometrics**

Instructor: Zhongjun Qu, qu@bu.edu  
Class hours: Tuesday and Thursday 12:30pm - 2:00pm  
Class location: GCB 208  
Office hours: Tuesday 3:30-5:00, Wednesday 2:00-3:30  
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TA: Junghwan Mok, Email: jhmok@bu.edu, Office Hour: TBA, Office: TBA  
Web: [http://courseinfo.bu.edu/courses/09fallcasec414\\_a1/](http://courseinfo.bu.edu/courses/09fallcasec414_a1/)

### **Course Objectives**

The course is an introduction to multiple regression and related methods for analyzing data in economics and finance. Additional topics include instrumental variables regression, discrete choice model, panel data regression and regression with time series data. The goal is to teach students to become sophisticated consumers of econometrics.

### **Prerequisite**

The prerequisite is EC 305 or MA 214 or SMG SM 221. Familiarity with probability, statistics and basic calculus is assumed. For a review on probability and statistics, students should read chapter 2 and chapter 3 of Stock and Watson (2007) listed below.

### **Required Textbook**

J.H. Stock and M.W. Watson, Introduction to Econometrics (second edition), Addison-Wesley, 2007.

## Assignments and Grading

There will be biweekly assignments. The assignments will have both analytical and empirical problems. The students are encouraged to collaborate on the problem sets but must turn in their own copy. The maximum group size is 3. You need to list the name(s) of the student(s) whom you worked with. *Completed homework assignments are to be handed in at the beginning of the class on the day they are due. After 15 minutes into the class on the day a homework is due, it will be considered late. NO late homework will be accepted. There will be NO exceptions to this policy, other than certified religious or medical excuses.*

The evaluation will be based on problem sets (20%), a midterm exam (30%) and a final exam (40%) and the class participation (10%, attendance and class discussion). For the exams, you are allowed to bring a letter-sized paper with formulae you need and a calculator. No other documentation is allowed. There will be NO make up exam.

Students who have questions about the grading (regarding homework assignments or exams) must talk to me within one week after the grades are assigned. Otherwise the grades are final.

## Software

Students will have to use a software package in this course. I suggest Stata. *The exam will contain Stata questions.* Stata can be ordered online at:

<http://www.stata.com/order/new/edu/gradplans/gp-campus.html>

The recommended version is:

Stata/IC 11 and Getting Started manual (single user, one-year license)

Product code: ICGPA; Price: \$98.00

Or

Stata/IC 11 and Getting Started manual (single user, perpetual license)

Product code: ICGP; Price: \$179.00

Or

Small Stata 11 and Getting Started manual (single-user, one-year license)

Product code: SMGPA; Price: \$48

Small Stata is limited to analyzing datasets with a maximum of 99 variables on approximately 1,000 observations. It can have at most 38 right-hand-side variables in a model. Small Stata is sufficient to solve the problems for EC414. However, if you are going to take more econometrics courses, I would recommend you to purchase Stata/IC.

### **Academic Conduct:**

Students should know and understand the CAS Academic Conduct Code. Copies of the CAS Academic Conduct Code are available in room CAS 105. Any suspected academic misconduct would be reported to the Dean's Office.

## CLASS SCHEDULE

| WEEK    | DATE    | TOPIC  | Readings      |
|---------|---------|--|---------------|
| Week 1: | Sep. 3  | Introduction   | SW chapter 1  |
| Week 2: | Sep. 8  | Bivariate Regression (I)                             | SW chapter 4  |
|         | Sep. 10 | Bivariate Regression (II)                            | SW chapter 4  |
| Week 3: | Sep. 15 | Bivariate Regression (III)                           | SW chapter 5  |
|         | Sep. 17 | Linear Multiple Regression (I)                       | SW chapter 6  |
| Week 4: | Sep. 22 | Linear Multiple Regression (II)                      | SW chapter 7  |
|         | Sep. 24 | Linear Multiple Regression (III)                     | SW chapter 7  |
| Week 5: | Sep. 29 | Nonlinear Regression functions (I)                   | SW chapter 8  |
|         | Oct. 1  | Nonlinear Regression functions (II)                  | SW chapter 8  |
| Week 6: | Oct. 6  | Assessing Studies Based on Multiple Regressions (I)  | SW chapter 9  |
|         | Oct. 8  | Assessing Studies Based on Multiple Regressions (II) | SW chapter 9  |
| Week 7: | Oct. 13 | NO CLASS   |               |
|         | Oct. 15 | Midterm Review                                       |               |
| Week 8  | Oct. 20 | <b>Midterm</b>                                       |               |
|         | Oct. 22 | Panel Data (I)                                       | SW chapter 10 |
| Week 9  | Oct. 27 | Panel Data (II)                                      | SW chapter 10 |
|         | Oct. 29 | Panel Data (III)                                     | SW chapter 10 |
| Week 10 | Nov. 3  | Instrumental Variable Regression (I)                 | SW chapter 12 |
|         | Nov. 5  | Instrumental Variable Regression (II)                | SW chapter 12 |
| Week 11 | Nov. 10 | Instrumental Variable Regression (III)               | SW chapter 12 |
|         | Nov. 12 | Review   |               |
| Week 12 | Nov. 17 | Regression with Binary Dependent Variables (I)       | SW chapter 11 |
|         | Nov. 19 | Regression with Binary Dependent Variables (II)      | SW chapter 11 |
| Week 13 | Nov. 24 | Time Series Regression and Forecasting (I)           | SW chapter 14 |
|         | Nov. 26 | NO CLASS   |               |
| Week 14 | Dec. 1  | Time Series Regression and Forecasting (II)          | SW chapter 14 |
|         | Dec. 3  | Dynamic Causal Effect (I)                            | SW chapter 15 |
| Week 15 | Dec. 8  | Dynamic Causal Effect (II)                           | SW chapter 15 |
|         | Dec. 10 | Final Review   |               |