

August 17, 2017

Econometrics (ECO 4421-U01)

Class No. 89214

Department of Economics, Florida International University
Fall Semester 2017 (Aug 21 – Dec 02)

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Office Hours: T, R 08:15-09:15 am
Lectures: T, R 11:00-12:15 am in GC 279A

Textbook

Essentials of Econometrics by Damodar N. Gujarati & Dawn C. Porter, 4th Edition, McGraw Hill Irwin Publishers, ISBN: 978-0-07-337584-7

The textbook is required reading material and all students are expected to obtain personal copies for use in this course.

Prerequisites

The formal prerequisites for this course are Eco 3101, Eco 3203, and Eco 3410, or permission from the instructor. You are also assumed to have a working knowledge of calculus (a course like MAC 2233 Calculus for Business, or MAC 2311 Calculus I are strongly recommended).

Note: You should NOT take the course at this time if:

- You do not satisfy the above prerequisites, or
- You have a final exam conflict

See also the **Note** under **Course Outline, I. Prerequisite Material** on page 4 of this syllabus.

Course Objectives

The course has two objectives. The first is to introduce the fundamentals of econometrics. This will consist of various traditional topics in econometrics such as the classical linear regression model, ordinary least squares estimation procedure, hypothesis testing, dummy independent variables, and multicollinearity. Regular homework assignments will be given to enhance understanding of the core material in the course.

The second objective is to get students familiar with the art of conducting empirical work in econometrics with real-world datasets using suitable computational software. Towards this end, computer assignments will be given periodically throughout the course. Students are *required* to work with some econometric software for their regular homework assignments.

Assessment

The course assessment will consist of several homework and computer assignments together worth 40%, 2 midterm examinations each worth 20%, and a final exam worth 20%. Two necessary but not sufficient conditions to qualify for a passing grade in the course are –

1. to turn in all homework assignments in the course on time
2. to score not less than 40% on all the exams combined (that is, 40% of 60% combined weight for all the exams, which equals 24% of the overall grade in the course).

Dates for the midterms will be announced in class well in advance.

Makeup Examination

There will be no makeup examination under any circumstances.

Grades

The final course grade will be based on the cumulative total score in the course comprising of the scores on the homework and computer assignments, midterm, and the final exam. Letter grades will be based on the distribution (“curve”) of these final scores of all students in the course. Depending on the overall performance of the students, the minimum total score required to obtain a particular grade (“the cutoff”) will be determined at the end of the semester.

Guidelines for Submitting Homework and Computer Assignments

Homework and computer assignments will be given throughout the semester on all major topics covered in the course (see below under course outline). Each assignment will consist of several questions, analytical and computational, frequently from the back of the chapters in the textbook. Students are responsible for answering all the questions assigned for each homework.

Students are encouraged to work in collaboration with a partner on their homework and computer assignments. Only *one copy* of the homework / computer assignment is to be handed in between every *two* students.

Although I do not expect typed homework submissions, these nevertheless have to be neatly written, stapled, concise yet complete, and include all relevant computer programs and computer output where appropriate.

Solutions to the homework questions will be discussed in class.

Late assignments will not be accepted for any reason whatsoever.

Homework Assignments

HW 1 -- From Appendix A, A.8-A.12

HW 2 -- From Appendix B, B.8-B.16

HW 3 -- From Appendix A, A.19

From Appendix B, B.17, B.18(a), B.19-B.20, B.22, B.24

HW 4 -- From Chapter 2, 2.4 (a,c,d,f,h,i), 2.18, 2.23-2.28

HW 5 -- From Appendix D, D.3, D.4 (a-e)

From Chapter 3, 3.2 (a-c), 3.6, 3.9 (a), 3.24-3.25

HW 6 -- From Appendix C, C.2, C.5, C.12, C.14-C.18, C.25-C.26

HW 7 -- From Appendix D, D.7-D.9, D.15-D.17, D.21

HW 8 -- From Chapter 3, 3.2 (d-i), 3.3, 3.9 (b-e), 3.11

HW 9 -- From Appendix D, D.1, D.2, D.4 (g-k), D.5, D.6

HW 10 --From Chapter 2 - Computer assignment

2.10, 2.12, 2.13, 2.15, 2.16

HW 11 --From Chapter 3 - Computer assignment

3.14, 3.15, 3.18, 3.19

HW 12 --From Chapter 4, 4.3 (b-d, f-j), 4.5, 4.6, 4.8, 4.9, 4.11, 4.12,

4.15, 4.16

HW 13 --From Chapter 4 - Computer assignment

4.14, 4.18, 4.22 (a)

Final Exam

Thursday Dec 07, 2017 at 09:45-11:45am in lecture room

Due Dates: Students are required turn in all HWs above. Each successive HW assignment is due at start of every Thursday class (in hardcopy format, not electronic submissions), starting from the 2nd week of semester.

Course Outline

I. Prerequisite Material

Appendix A, B, C, D

1. Review of Probability and Statistics.
 - a. point estimate; interval estimate
 - b. properties of estimators; unbiasedness; efficiency; consistency
 - c. classical hypothesis testing; sampling distribution
 - d. point hypothesis; interval hypothesis;
 - e. significance level; p-value; confidence interval
 - f. Type I error; Type II error; power of test

Note: A number of homework assignments are designed to refresh your knowledge of this review material. If you are unfamiliar with the bulk of the review material already, you should DROP this course and get adequate background before enrolling.

II. Course Material

The course will essentially deal with Chapters 2-4.

2. Basic Ideas of Linear Regression: The Two-Variable Model. Chapter 2.
 - a. regression analysis; dependent variable; independent variables
 - b. deterministic relationships; stochastic (statistical) relationships
 - c. disturbance / error term; assumptions on the error term
 - d. estimation methods; method of moments; least squares; maximum likelihood
3. The Two-Variable Model: Hypothesis Testing. Chapter 3.
 - a. assumptions
 - b. estimation by least squares
 - c. statistical inference; test of hypotheses;
 - d. prediction
4. Multiple Regression: Estimation and Hypothesis Testing. Chapter 4.
 - a. assumptions
 - b. estimation by least squares
 - c. statistical inference; test of joint hypotheses; test for linear functions of parameters
 - d. prediction
 - e. perfect collinearity; symptoms; detection; problems with measuring multicollinearity; solutions

Academic Misconduct

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.