

Economics 4213

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Hours 8:40 - 11:30 Wednesday

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1 Purpose

The purpose of this course is to prepare you to use regression analysis given a well-defined economic problem. Emphasis will be placed on your ability to understand when to adopt a particular model or technique, how to implement it, and how to interpret your results. This means that you will be spending a significant portion of your time this semester in front of the computer terminal.

1.1 Recommendation

I recommend that you find a study partner. There is a lot of material to learn in this course and some of it will appear to be overly technical (though I promise you that I will avoid anything that I do not deem necessary to achieve our stated purpose). Each person in the course will have different opportunity costs associated learning the many things that we are covering. Therefore there are ample possibilities to use the law of comparative advantage to *your advantage*.

2 Textbooks

Required

Hill, Griffiths, and Judge, *Undergraduate Econometrics*, 2nd edition, John Wiley & Sons, 2001.

Other Sources

SAS/ETS Software: Applications Guide 2.

Undergraduate Econometrics using Gretl, 2006.

Peter Kennedy, *A Guide to Econometrics*, 3rd Edition, MIT Press.

3 Prerequisites

This course requires you to work with basic probability, statistics, algebra, and to use SAS or *Gretl*. As prerequisites I recommend one or two courses in statistics (a reasonably solid understanding of the first course in stat is sufficient) in addition to a good command of algebra. You should have some notion about what random variables are, what a probability distribution is, what a statistic is, and what a hypothesis test is. These are things that we will cover, but we move through them quickly. If you haven't learned about these before you'll never be able to keep up. It is not necessary that you have any previous experience with linear regression, though this would be *very* helpful.

4 Course Outline

1. Introduction to Econometrics
 - (a) The Role of Econometrics in Economic Analysis (Chapter 1)
 - (b) Probability (Chapter 2)
2. Simple Linear Statistical Model
 - (a) Simple Regression (Chapter 3)
 - (b) Properties of the Least Squares Estimator (Chapter 4)
 - (c) Inference in the Simple Regression Model (Chapter 5)
 - (d) Functional Form, Reporting Results, and Carrying Out an Econometric Project (Chapter 6)
3. General Linear Regression Model
 - (a) Multiple Regression: Hypothesis Tests and Use of Nonsample Information (Chapter 8)
 - (b) Dummy Variables (Chapter 9)
 - (c) Nonlinear Models (Chapter 10)
 - (d) Heteroscedastic Errors (Chapter 11)

- (e) Autocorrelated Errors (Chapter 12)
- (f) Pooling Time-Series and Cross-Sectional Data (Chapter 17)
- (g) Qualitative and Limited Dependent Variable Models (Chapter 18)

Given the wide range in the level of preparation students in this course have, I reserve the right to make changes in the course syllabus as I deem necessary to accomplish our objective.

5 Exams

There will be 3 in-class exams in the course.

5.1 Grading

Your grade in this class will be based on your performance on 3 exams and on homework assignments. The exams and homework will receive the following weights.

Grade Weights

Exam 1	25%
Exam 2	25%
Exam 3	30%
Homework	20%

Grades will be assigned based on your mastery of the items listed on the accompanying page.

Grades

90%–100%	A
76%–90%	B
60%–75%	C
50%–60%	D
< 50%	F

6 Homework

There will be a significant amount of homework in the course. The best way to learn econometrics is to do econometrics. A large portion of your homework will require you to use a computer. Most of your homework grade will be based on a few (perhaps only 1 assignment) that is made toward the end of the course. This homework will be due when you take your final exam.

The computer software that I am going to show you how to use is SAS. SAS is available on most of the Microsoft Windows based computers on campus, including those in the CBA lab, the student tech fee labs around campus, and others. For those of you who own personal computers, I can recommend a useful alternative to SAS. It is called *Gretl* and it is free software that will do everything that we are going to do in this course. If you want to use *Gretl* instead of SAS, then feel free to do so. I will post a manual that I have written that replicates examples from the book.

I will not accept late homework under any circumstance. I expect homework to be legible and well organized. I encourage you to work with others in the class while doing homework, and may turn in assignments in groups of 2. The homework receives style points, so identical answers may receive different grades. I am predisposed to work that is well organized and legible.

All exams must be taken at the designated time. No make up exams will be given. If you miss an exam you will receive a grade of zero.

Unless you are specifically told otherwise by me, all homework must be turned in at the beginning of the class period on the date that it is due. Homework will not be accepted if late.

7 Attendance

Regular attendance is expected. You are responsible for any material you miss because of absence. In general, I do not permit students to copy my notes. If you miss class and need a copy of the notes, please obtain them from one of your classmates.

8 Cheating Policy

Cheating will not be tolerated. Any violation of the University's academic dishonesty policy will be prosecuted according to University regulations. You will receive a grade of 0 on any test or assignment you are caught cheating on. In addition, you are responsible for the security of your work (in other words, if someone copies your work, you will also receive a zero on the test or assignment).

Econometrics is Fun!