

Department of Economics, University of Southern California
ECONOMICS 414, Introduction to Econometrics,
Summer 2009, T-W-TH 10:00-11:50, KAP-166
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Course Objective:

Econometrics is concerned with how to use statistical methods and procedures for economic data. Econometrics techniques have been increasingly used in macroeconomics and applied microeconomics. Macroeconomics data are used for testing macroeconomic theories, evaluating the impacts of public policies, estimating macroeconomics relationships and forecasting economics variables such as inflation rate, GDP growth rate and interest rate. Application of econometrics to microeconomic is concerned with estimating microeconomic relationships, testing theories, and evaluating and forecasting impacts of business decisions.

This course is designed to provide the students with sufficient knowledge of statistics and econometrics necessary to understand and be able to evaluate and interpret econometrics researches that use basic linear regression methods. After completion of this course students should be able to perform tasks of data collection, modeling of econometrics relationships, estimating and testing of the model, and interpreting and using the estimation results.

Course Overview:

We will start with a brief overview of data presentation and fitting of the data. Univariate and bivariate populations and inference about parameters of the population will be covered next. The second part of the course deals with classical and multiple linear regression models. This is the main focus of the course. We will cover variety of the topics under regression models such as, assumptions of linear regression, estimation, interpretation of the parameter estimates, goodness of fit, testing for restrictions on parameters, consequences of violation of the necessary assumptions, and forecasting. The last part of the course deals with relaxing the classical assumptions and how to estimate the linear model in absence of these assumptions. Focus of this part of the course is on problems such as heteroscedasticity, and autocorrelation.

Examinations, Homework and Grading:

The list of homework assignments from the end of chapter problems and questions is on the last page of the syllabus. Homework assignments should be turned in on time and preferably typewritten. There will be no credit for late homework. Homework and class participation are worth 20% of the course grade. There will be 2 midterm exams and a final exam. Midterm exams are non-cumulative and consist of problems and short answer questions. Each midterm exam accounts for approximately 25% of the course grade. Although the midterm exams are non-cumulative, most chapters build on previous ones. Hence, to do well on the exams, students should carefully review the previous chapters. The final exam counts for 30% of the course grade and will cover most the materials in the course.

The course will be graded on regular scale of 100% unless class average falls short of my expectations. In that case, I will use a curve based on the average grade of students who actually complete the course. The two midterm exams are usually during 3rd and 6th week of instruction. The exact dates of the midterm exams will be announced in class at least 10 days in advance. **The final exam is scheduled for Tuesday July 14th.**

Policy on Missed Exams:

Students must take the exams as scheduled. There will be no make-up exams unless a student has a valid medical excuse and can provide documentation for such an excuse, or if a student cannot take the exam because of extenuating circumstances, and prior arrangements are made with the instructor if possible. A permission form is attached at the back of this syllabus. The student will receive zero credit for unexcused missed exams. Student will receive an F for course if final exam is missed for unexcused absence regardless of student's performance during the semester. If a student has a valid reason for missing the final exam, and can document it, he/she will be awarded an incomplete.

From DSP Office:

Students requesting academic accommodations based on a disability are required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP when adequate documentation is filed. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is open Monday-Friday, 8:30-5:00. The office is in Student Union 301 and their phone is (213) 740-0776.

Academic Dishonesty:

The academic integrity violation under student conduct code is described as:

"Cheating on examinations such as communications with fellow students during an exam, copying material from another student's exam, allowing another student to copy from an exam, taking an exam for another student, use of unauthorized material or device during exams, and/or any behavior that defeats the intent of an exam or other class works."

I will always seek maximum penalty allowed in the event of cheating.

Note:

- 1- Points for class participation are earned by involving in class discussion.
- 2- Students are advised to take notes during class, because exam questions are mostly on the subjects discussed in the class. You should also know that your notes are not substitutes for the text.
- 3- Students should be aware that this course is designed in such a way that knowledge of the prerequisites (Econ 317 and some knowledge of macro and microeconomics theories and elementary calculus) is essential to passing the course.

Course text and Computer Information:

The required text is:

Ramanathan, Ramu, Introductory Econometrics with Applications. 5th Edition.

The class lectures are organized in the same sequence as in Ramanathan's book. But if you don't like the presentation style of the text, you can find the same topics in any of the following books.

Studenmund, A. H. Using Econometrics: A Practical Guide, Addison Wesley Longman.

Goldberger, A. (Latest Edition). Introductory Econometrics, Harvard.

Hill, C., W. Griffiths, and G. Judge. (1997). Undergraduate Econometrics, Wiley

Gujarati, D. (Latest Edition), Basic Econometrics, McGraw-Hill.

Johnson, A., M. Johnson and R. Buse (1987), Econometrics: Basic and Applied.

You may use any statistical software for your homework assignments such as SAS, STATA, MINITAB, EVIEWS, SHAZAM, EXCEL, etc. Some of these software programs are available on the network at USC and instructions for using them will be available to students. Your text includes a free copy of GRETl that is used by the text for all examples and practices. GRETl Manual along with all databases for homework and book examples are all included in the CD accompanying your textbook or you can download it free of charge from:

<http://gretl.sourceforge.net/>

List of Topics:

We will cover the following topics in the same sequence as your textbook and if time allows, we will cover some of the topics of chapters 10 to 12.

1. Introduction to Econometrics
2. Review of Probability and Statistics
3. Simple Linear Regression
4. Multiple Regression
5. Multicollinearity
6. Functional Forms and Model Specification
7. Qualitative Independent Variables
8. Heteroscedasticity
9. Autocorrelation (Serial Correlation)
10. Simultaneous Equations (ch13)

List of Homework Assignments:

There will be other problems assigned from the lecture in addition to the following problem.

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|-------------|-----------------------------------|
| Chapter 1: | 1, 4, 5 |
| Chapter 2: | 5, 10 15, 16, 18, 22, 23 |
| Chapter 3: | 5, 14, 23, 27, 33(a, b, c, d), 34 |
| Chapter 4: | 1, 8, 21, 25 |
| Chapter 5: | 1, 4, 8, 9 |
| Chapter 6: | 8, 9, 13, 17, 21(a, b, d, f, h) |
| Chapter 7: | 1, 3, 14, 18, 24 |
| Chapter 8: | 11, 12, 17, 25 |
| Chapter 9: | 3, 13, 22(part), 26 |
| Chapter 13: | 4, 6, 7, and more |