EC 508. Econometrics. Professor R Lucas. Fall 2017
Wednesday and Friday 2.30-3.45
ROOM CAS 220

Office hours

Wednesday 9-10 and Friday 12-2, room 500, 264 Bay State Rd.

Course content

EC508 is an introduction to regression analysis for economists. The course will start with the basic theory of ordinary least squares regression, inference from these estimates, specification and interpretation of multiple regression estimates. Following this, various problems in estimation, both in cross-sectional and time-series data, will be considered, including: collinearity, heteroscedasticity, autocorrelation and errors in measurement. Other topics to be covered include dependent dummy variables, distributed lags and estimation of simultaneous systems. Throughout, students will use Stata software to explore these estimation methods.

Preparation

Math: Matrix algebra will not be used. However, students will be expected to be comfortable using basic algebra (such as polynomials, summation notation and logarithms) and some differential calculus (including partial derivatives and first-order conditions for minimization).

Statistics: A brief review will be offered, but students should be familiar with the normal distribution, t-statistics and F-statistics and their use in hypothesis testing.

Economics: Familiarity with basic micro and macro economics will be assumed.

Requirements

The requirements for this course are fourfold: a midterm examination, a final examination, a series of problem sets and class participation.

The mid-term examination will be held during class time on **Friday, October 20th.**

The final examination is cumulative;
            Tentative date and time **Monday, December 18th 3-5.**

Both examinations are required. The only excuses for missing an exam are serious illness or a family emergency. No make-up exam will be set for the midterm. Instead, students unable to attend the midterm examination for a legitimate reason will receive a course grade determined by performance on the final examination. Students entitled to extra time on examinations should inform Professor Lucas of this in the first two weeks of classes.

Printed solutions to all problem sets will be collected during class time on the dates announced; unfortunately digital and late solutions cannot be processed. Failure to hand in ALL solutions on time will result in a reduction in the final grade. Otherwise problem set

solutions will not count toward the grade. Problem sets will be posted on Blackboard and solutions circulated either by e-mail or on Blackboard.

Class participation includes: attending every class (unless excused), arriving on time, and contributing to class discussions/question time (which will be at the beginning of each class).

The grade for the course is determined entirely by your examination results and class participation, subject to completion of all problem sets.

> The mid-term examination represents 35 percent of the total grade;
> The final examination contributes 55 percent of the grade.
> Class participation is the remaining 10 percent of the grade.

Stata.

Access to Stata software is required to complete the problem sets.

Access is available either through the Economics Department/IED computer lab or by purchasing Stata (available at student prices through a BU Gradplan).
See http://www.stata.com/order/new/edu/gradplans/student-pricing/
Note that Small Stata will not suffice though Stata/IC is perfectly adequate.

Text: The required textbook for this course is:

D.N. Gujarati, *Basic Econometrics*.
This book is available at the Barnes and Noble BU Bookstore

Academic conduct

You need to read the CAS Academic Conduct Code, which you can pick up in room CAS B3. Academic misconduct involves not only direct cheating on tests, but some more subtle acts as well. All work handed in for credit must be your own, with the exception that you may quote or paraphrase from other sources if you also cite the reference and page number. (It is not permissible, however, to use another student's work even if you cite that work.) Your consultations with classmates should be limited to general discussions. I will report cases of suspected academic misconduct to the Dean's Office. Confirmed cases of misconduct will result in a failing grade on the exam or assignment.

Topics and Readings

SEP	6	Organization meeting
	8	Chapter 1: Nature of Regression Analysis and Chapter 2: Some Basic Ideas
	13	An introduction to Stata
	15	Chapter 3 (including appendix): The Problem of Estimation
	20	Chapter 4: Classical Normal Linear Regression Model
	22	Chapter 5: Interval Estimation and Hypothesis Testing
	27	Chapter 6: Specification and Interpretation
	29	Chapter 7: Multiple Regression
OCT	4	Chapter 8: The Problem of Inference
	6	Chapter 9: Dummy Variables
	11	Chapter 10: Multicollinearity
	13	Chapter 11: Heteroscedasticity
	18	Review
	20	**Midterm Examination**
	25	Chapter 12: Autocorrelation
	27	Chapter 13: Specification and Measurement error
NOV	1	Chapter 13: (continued)
	3	Chapter 15: Dependent Dummy Variables
	8	Chapter 16: Panel Data
	10	Chapter 17: Distributed Lags
	15	Chapter 18: Simultaneous Equation Models
	17	Chapter 19: Identification
	29	Chapter 20: Estimating Simultaneous Equation Models
DEC	1	Chapter 20: (continued)
	6	Chapter 21: Time Series
	8	Review