

Economics 120-B
ECONOMETRICS

Overview

This course is an introduction to regression analysis. Using a variety of economic examples, we will discuss how to specify, estimate, test, and interpret linear regression models. This is the second course in the three-course econometrics sequence; Economics 120-A is a prerequisite.

The textbook for the course is Ramu Ramanathan's *Introductory Econometrics with Applications*. It is available for purchase at the UCSD bookstore, and at least one copy will be on reserve at the library. Some of the assignments will involve estimating regression models using real data; you will be taught how to do this using the regression package in Microsoft® Excel.

Course Information

Instructor's office hours: Mon. 9:30-10:30 AM, Fri. 1:00-2:00 PM, Economics 312
Course web page: <http://econ.ucsd.edu/~asorensen/ec120b.html>

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Requirements

Your grade in this course will be based on the following (grade weights in parentheses):

(25%) Problem Sets. Six problem sets will be distributed throughout the quarter. You may work on them in groups; however, each student must turn in his or her own set of answers. Each problem set will receive a grade of 2, 3, or 4 points, depending on the quality of the answers. (If you don't turn in a problem set, you receive 0 points.) Solutions will be posted on the course web page. Late problem sets will NOT be accepted.

(40%) Midterm Exams. There will be two in-class midterm exams during the quarter. Make-up exams will *not* be offered; if you miss an exam, your grade for that exam is 0. Tentative exam dates are Tuesday, October 16 (Midterm #1) and Tuesday, November 13 (Midterm #2).

(35%) Final Exam. The final exam will be comprehensive. The scheduled date for the exam is Tuesday, December 4, 11:30am-2:30pm.

Important note: Your problem sets and exams will be graded by the teaching assistants based on specific instructions from the professor. Any errors made in grading must be rectified within **one week** of the date the problem set or exam was returned—after this one-week grace period, no changes will be considered.

Tentative Course Outline

We will cover chapters 1-6 (and possibly 7) of the textbook. See the course web page for a more detailed schedule of reading assignments.

Introduction & Review

- A. What is econometrics?
- B. Properties of expectation and variance
- C. Review of useful statistical distributions
- D. Estimators and desirable properties of estimators
- E. Confidence intervals and hypothesis testing

Simple Linear Regression

- A. The basic model: explanation and underlying assumptions
- B. Estimation by Ordinary Least Squares (OLS)
- C. Properties of OLS estimators
- D. Goodness of fit
- E. Hypothesis testing and confidence intervals
- F. Questions of causality

Multiple Linear Regression

- A. The model: explanation and interpretation
- B. OLS estimation
- C. Goodness of fit
- D. Hypothesis testing
- E. Specification errors and their consequences
- F. Multicollinearity
- G. Double-log and semi-log specifications
- H. Qualitative independent variables