

Department of Economics  
University of California at Berkeley

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## Economics 240A: Econometrics

This is the first course in a two-semester sequence on econometrics (a.k.a. quantitative methods), including statistical tools useful in economic applications and procedures used for empirical implementation and validation of economic relationships. The first half of the semester is an introduction to statistical inference, while the second half covers the general linear regression model. The course emphasizes techniques for statistical inference, with accompanying theory. Experience in application of the tools is provided in a computer laboratory. Prerequisites are an upper-division undergraduate course in mathematical statistics and a working knowledge of linear algebra (at the level of Economics 204).

The class will meet Monday and Wednesday 10:00-12:00 in 247 Cory. In addition, weekly sections will be conducted. Grading will be based on performance on the (approximately biweekly) problem sets (25%) and two midterm exams (75%). The midterm exams will be given in class on October 20 and December 10, respectively; no make-up exams will be given. Any time conflicts should be discussed with the instructor well before the exam date. Some of the exercises will require use of the Econometric Microcomputer Laboratory (EML); details will be given in the discussion sections.

The principal texts for the class are:

- Casella, G. and R.L. Berger, *Statistical Inference, Second Edition*. Duxbury Press, 2002 (cited as “Casella and Berger”).
- Goldberger, A. *A Course in Econometrics*. Harvard University Press, 1991.

Other useful references are:

- Bickel, P.J. and K.A. Doksum, *Mathematical Statistics: Basic Ideas and Selected Topics, Second Edition*. Prentice Hall, 2001.
- Manski, C.F., *Identification for Prediction and Decision*. Harvard University Press, 2008.
- Ruud, P.A., *An Introduction to Classical Econometric Theory*. Oxford University Press, 2000.

### TENTATIVE COURSE OUTLINE FOR FIRST HALF:

1. **Review of probability theory**  
Casella and Berger, Chapters 1-5.
2. **Point estimation**  
Casella and Berger, Chapter 7.
3. **Hypothesis testing**  
Casella and Berger, Chapter 8.
4. **Interval estimation**  
Casella and Berger, Chapter 9.