DESCRIPTION

This is the second half of the year-long sequence in econometric methodology. The objective of this course is to introduce the conventional and frontier topics of econometric methodology, after which students do not experience difficulties in reading journal articles.

PREREQUISITE: Satisfactory completion of Econ 8828. Working knowledge of mathematical statistics.

TEXTBOOKS

3. Further readings will be assigned later.

Davidson and Mackinnon’s is the major textbooks for this course. Greene’s book is a good reference book for any subject you might need to review to understand the materials covered in this course.

ORGANIZATION

Two lectures per week. One midterm and one final will be given.

STUDY GUIDE

This course requires comprehensive understanding of class materials. This can be best done by applying theoretical techniques to the actual problems. There are ample amount of past exams for this course, and that provides the best opportunity to help understand difficult concepts.

GRADING: 50% for each exam. (one midterm and one final will have equal weight.)
TENTATIVE COURSE SCHEDULE

1. Asymptotic Theory (Davidson and Mackinnon (D.M.), Chapter 4)
   - Different Mode of Convergence
   - Law of Large Numbers
   - Central Limit Theorem

2. Maximum Likelihood Estimation and Nonlinear Least Squares (D.M., Chapters 5 and 8)
   - Cramer-Rao Lower Bound
   - Consistency
   - Asymptotic Normality
   - Iterative Procedure
   - Hypothesis Testing

3. Limited Dependent Variable Analysis (D.M., Chapter 15)
   - Probit
   - Logit
   - Tobit Analysis
     - Censored Regression Model
     - Truncated Regression Model

4. Frontiers of Econometrics (Further reading list will be provided)
   1. Semiparametric Analysis
      - Method of Moment Analysis (D.M., Chapter 17)
      - Least Absolute Deviation
      - Maximum Score Analysis
      - Single Index Model
   2. Nonparametric Analysis