Prerequisites for the Graduate Econometrics Sequence

Starting with incoming class of 2007 there will be a new format for the graduate econometrics sequence. It is assumed that students entering the econometrics sequence have the appropriate knowledge in probability and statistics, and linear algebra. To help students to prepare for the sequence the Department offers a summer course in probability and statistics. More details concerning the prerequisites are given below.

Probability and Statistics Requirement

The Department has adopted the following policy concerning fulfilling the probability and statistics requirement:

"The lectures in Econometrics I will assume knowledge of the material presented in the Introduction to Probability and Statistics summer course. The Department will offer an additional discussion session to Econometrics I that further helps students with the material on probability and statistics. Students will be offered to take a test at the beginning and/or at the end of the summer session. Students who pass the test at the beginning of the summer session will be advised that they do not have to attend the probability and statistics summer session. Other students will be advised to attend the summer session. Students that have not passed the test in probability and statistics, either at the beginning or the end of the summer session, will be permitted to take Econometrics I. However they will be advised to attend the extra discussion session for Econometrics I to help them catch up on the probability and statistics material."

The policy is quite flexible. In discussing the requirement the Department specified that that students are expected to be familiar with fundamental concepts in probability and statistics at the level of textbooks by, say, Casella and Berger, Statistical Inference, Duxbury Press, and Hogg, McKean and Craig, Introduction to Mathematical Statistics, Prentice Hall.

Undergraduate statistics courses vary across universities. Mastery of material presented in courses equivalent in scope and level to the University of Maryland undergraduate courses STAT 410 and 420 should be sufficient to succeed in the Econometrics sequence. The material covered in these courses relevant to econometrics includes:

STAT410 Introduction to Probability Theory; Probability and its properties. Random variables and distribution functions in one and several dimensions. Moments. Characteristic functions. Limit theorems.

STAT420 Introduction to Statistics; (3 credits) Point estimation, sufficiency, completeness, Cramer-Rao inequality, maximum likelihood. Confidence intervals for parameters of normal distribution. Hypothesis testing, most powerful tests, likelihood ratio tests. Chi-square tests, analysis of variance, correlation.

Please consult the on-line syllabus for the Introduction to Probability and Statistics summer course for a more precise list of topics.

Linear Algebra Requirement

Students are assumed to have knowledge of linear algebra. A handout on the basic concepts of linear algebra that students are expected to be familiar with is, e.g., available on my web site.