ECON770: STATISTICS (Fall 2012)

- **Instructor:** Zhijie Xiao
- **TA:** Laura Bonacorsi (laura.bonacorsi@bc.edu)
- **Course Meeting Times/Location:** M W 10:30 - 11:45AM. Carney 305
- **Office Hours:** M W 2:00 - 3:00

This is the first course of the Ph.D. econometrics sequence. Its primary objective is to provide a statistical foundation and its application to linear regression models for further coursework in econometrics at Ph.D. level. Linear algebra and calculus are pre-requested.

- **Textbooks:**

- The material covered in this course can be found in a number of textbooks (at different levels). e.g.:
  - Knight, Keith, Mathematical Statistics.

- **Requirements:**

  There will be 8-10 problem sets. Late assignments will not be accepted. You are allowed to work together in groups, but it is necessary that you attempt each problem yourself and turn in individual answers. The Boston College policy on academic integrity is outlined at:
http://www.bc.edu/bc_org/avp/enmgt/stserv/acd/univ.html#integrity.

There will be 2 exams. The grade will be determined by homework (20%), and the exams (80%).

- **Course Outline**

   
   (a) Introduction to Probability, Conditional Probability: DeGroot and Schervish, Ch1 and 2.
   (b) Random Variables and Distributions: DeGroot and Schervish, Ch3.
   (c) Expectation: DeGroot and Schervish, Ch 4.
   (d) Special Distributions: DeGroot and Schervish, Ch 5.
   (e) Some Important Results in Probability: DeGroot and Schervish, Ch 4.6, 4.8.
   (f) Introduction to Asymptotics, Law of Large Numbers and Central Limit Theorem: DeGroot and Schervish, Ch 4.8, 5.7.

2. Part II: Statistical Inference: Estimation and Hypothesis Testing (DeGroot and Schervish, Ch 6-11)
   
   (a) Point Estimation: DeGroot and Schervish, Ch 6, 7.7.
   (b) Properties of Estimators: DeGroot and Schervish, Ch 7.
   (c) Hypothesis Testing: DeGroot and Schervish, Ch 8.
   (d) Linear Regression Models: DeGroot and Schervish, Ch 10.