EC 6412: Econometrics
Winter 2012
Columbia University

Class: T, R: 4:10-6pm (IAB 410)
Recitation: R 9:10-10:25 (304 Hamilton)
Professor: Serena Ng (IAB 1117)
Office Hours: M, W: 11-noon
TA: Kyle Jurado (kej2108)
TA Office Hours: F, 11-noon (outside 1114 IAB)

This is part II of a three course sequence in graduate econometrics. The pre-requisite is EC 6411. The focus of this course is the linear regression model, GMM, and basic time series methods. Students who did not take 6411 are welcome to sit in the class but you will not be given a credit. Visiting students scholars can attend the class without permission. Course material is only available to registered students. An audit will be given upon completing all problem sets.

We will meet January 20, 27 and Feb 3, 9am-noon. The course will finish April 12.

Textbooks Highly recommended textbooks:

- Hayashi, F. *Econometrics*, (2000), Princeton University
- Wooldridge, J. *Econometric Analysis of Cross-Section and Panel Data*, Second Edition, Princeton University Press.
- Lecture notes by Bruce Hansen: `www.ssc.wisc.edu/~bhansen/notes/Econometrics.pdf`.

Evaluation:

Midterm 1	February 14	25%
Midterm 2	March 8	25%
Midterm 3	April 12	25%
Problem Sets		25%

Problem sets will be assigned approximately every other week by the teaching assistant and will be due roughly ten days after they are assigned. The late penalty is two points per day. You will be required to use a statistical software package (like STATA) and/or a matrix programming software (like Matlab). You can use other packages (but not spreadsheets). However, only STATA and Matlab will be supported.

Topics to be Covered

A. The linear regression model with iid data Hayashi Ch. 1, 2, 6.6

- Projections and orthogonality conditions
- Least squares estimation
- Inference and specification tests. Greene Ch. 6, 7.

Mid-term 1: February 7.

B. Linear and Non-Linear GMM Hayashi Ch. 3, 7.

- endogeneity and IV estimation, Hansen Ch 13
- weak instruments and instrument robust inference
- non-linear GMM, Hansen Ch. 11, Greene Ch. 15.

Midterm 2: March 8.

C. Time Series Hayashi Ch. 6, 9, 10.

- univariate ARMA models, Greene, Ch. 21, Hansen, Ch. 14
- VAR, Hansen 15.
- filtering and spectral analysis
- unit roots and cointegration

Midterm 3: April 12.