Objectives and Pre-requisites  This course is intended for students who already have a firm grasp of introductory level econometrics (eg. Chapters 1-8 and 17 Stock and Watson’s book), and interested in advanced topics including asymptotic theory and non-linear/non-stationary models. Students should have taken and passed linear algebra (V2010), intermediate microeconomics (W3211), macroeconomics (W3213), and econometrics (W3412) or equivalent. To help you and I assess whether the course is too hard or easy (especially for students who did not take 3412 at Columbia), a short quiz will be given on monday Sept. 8. A pass is necessary to take the course for credit. In case if the class size exceeds the limit, priority will be given to registered Columbia students. Visiting students can sit in subject to space constraints. An audit will be given upon completion of all problem sets, pass two of three exams, with satisfactory class attendance.


Evaluation:

8 problem sets : 25%
Exam 1 (October 8) : 30%  Topics 1-4
Exam 2 (November 10) : 25%  Topics 5,6
Exam 3 (December 8) : 20%  Topics 7-10

No make up exam will be given. If you miss Exam 1, then Exam 2 will count for 50%. If you miss Exam 2, then Exam 3 will count for 40%. If you miss Exam 3, you loose 15% of your grade. Problem sets will be posted on the course web site. The late penalty is 2 points per day. The assignments will involve programming using MATLAB. While R can be used, no assistance will be offered! Other programming languages will not be allowed, and spreadsheets are strictly prohibited.

Topics to be Covered

1  OLS in Matrix Form: Chapter 3
2  Finite Sample and Asymptotic Properties: Chapter 4
3  Hypothesis testing: Chapter 5.1-5.7
4  GLS: Chapter 9.3
5  Maximum Likeilihood: Chapter 14.1-14.6
6  Endogeneity, Chapter 8.1-8.4, 8.7
7  Stationary time series: Chapter 20
8  Nonstationary time series: Chapter 21
9  Panel data: Chapter 18.1-18.5
10  Discrete Choice Models: Chapter 17.1-17.3