**Course**: STT 953, Spring 2014  
**Title**: Asymptotic Theory  
**Prerequisite**: STT 872, 882  
**Tentative Schedule**: 9:00-10:15, M W, WH506C  
**Professor**: H. L. KOUL,  
**Office hours**: By appointment.  

**A brief description**: The course will attempt to cover topics among the following:  

1. Bahadur’s proof of almost everywhere Fisher conjecture pertaining to a lower bound on the asymptotic variance of consistent asymptotically normal estimators.  
2. Locally asymptotically normal (LAN) models, Hajék’s convolution theorem, lower bound on asymptotic minimax risk, asymptotically locally minimax estimators, and adaptive estimators.  
3. Locally asymptotically quadratic dispersions and a general method of obtaining limiting distributions of minimum dispersion estimators. Example will include some models that are not LAN.  
4. Estimation and goodness-of-fit tests based on martingale transforms a la Khmaladze in some nonlinear time series models including threshold models and ARCH-GARCH models.  
5. Some large deviation results of Bahadur and Stein and the related inference.  
6. Proofs of the first order validity of bootstrap methodology and a discussion about the second order validity.  

Student’s grade will be based on **in class participation, home assignments and in class presentation**. Students will be presenting various papers towards the end of the semester. A student may choose the paper to be presented from the list of references that will be given in the class or any other paper relevant to the course content.  

The course will be drawn from the following texts and/or papers, among others.  


**Some Important Dates for Spring Semester, 2014**

First Day of Classes 1/6/2014

Open adds end (8:00pm) 1/10/2014

MLK - Holiday (no classes) 1/20/2014

Last day to drop with refund (8:00pm) 1/31/2014

Middle of Semester 2/26/2014

Last day to drop with no grade reported (8:00pm) 2/26/2014

Spring Break (no classes) 3/3/2014 through 3/7/2014


Exam Week: Monday, 4/28-Friday, 5/2.